
K. T. Ramesh

Alonzo G. Decker Jr. Professor of Science & Engineering
Director, Hopkins Extreme Materials Institute
The Johns Hopkins University

EDUCATION

B.E.	Mechanical Engineering	Bangalore University	1982
Sc. M.	Solid Mechanics	Brown University	1985
Sc. M.	Applied Mathematics	Brown University	1987
Ph.D.	Solid Mechanics	Brown University	1987
Postdoc	Mechanics of Materials	University of California San Diego	1987-88

APPOINTMENTS

Director	Hopkins Extreme Materials Institute	Since 2012
Director	Center for Materials in Extreme Dynamic Environments, JHU	Since 2012
Director	Center for Advanced Metallic and Ceramic Systems, JHU	2001 – 2012
Chair	Department of Mechanical Engineering The Johns Hopkins University	1999 – 2002
Professor	Department of Mechanical Engineering The Johns Hopkins University	Since 1997
Professor (Joint Appt.)	Department of Earth & Planetary Sciences The Johns Hopkins University	Since 2015
Professor (Secondary Appt.)	Dept. of Materials Science & Engineering The Johns Hopkins University	Since 1997
Principal Professional Staff	Johns Hopkins Applied Physics Laboratory (APL)	Since 2011
Visiting Scientist	Planetary Geodynamics Group, NASA Goddard Space Flight Center	Fall 2011
Visiting Professor	Ecole Polytechnique Federale Lausanne, Lausanne, Switzerland	Sep. – Oct. 2008
Visitor (Visiting Professor)	Cavendish Lab., Univ. Cambridge, UK	2002 – 2003
Visitor (Visiting Professor)	Engineering, Univ. Cambridge, UK	2002 – 2003
Associate Professor	Department of Mechanical Engineering The Johns Hopkins University	1993 – 1997
Assistant Professor	Department of Mechanical Engineering The Johns Hopkins University	1988 – 1993

HONORS AND AWARDS

W.M. Murray Medal	Society for Experimental Mechanics	2015
M.G. McLaren Lecture Award	Rutgers University	2014
Glass Memorial Lecturer	University of Toronto	2013
Midwest Mechanics Lecturer	Ten Midwest Universities	2012-2013
Fellow	Society for Experimental Mechanics	2013
B.J. Lazan Award	Society for Experimental Mechanics	2012
M. Hetenyi Award	Society for Experimental Mechanics	2006
Southwest Mechanics Lecturer	Texas A&M, UTA, SMU, Tulane	2002
Fellow	American Soc. Mechanical Engineers	2001
William H. Huggins Award for Excellence in Teaching	The Johns Hopkins University	1995
Elected Honorary Member	Pi Tau Sigma	1994
Best Paper	ASME Tribology Division	1987

ARCHIVAL JOURNAL PUBLICATIONS

1. **Ramesh, K.T.** & Clifton, R.J., "A Pressure-Shear Plate Impact Experiment for Studying the Rheology of Lubricants at High Pressures and High Shearing Rates," *Journal of Tribology, Transactions of the ASME*, Vol. 109, 1987, pp. 215-222.
2. **Ramesh, K.T.**, "On the Rheology of A Traction Fluid," *Journal of Tribology, Transactions of the ASME*, Vol. 111, pp. 614-619, 1989.
3. **Ramesh, K.T.** & Ravichandran, G., "Dynamic Behavior of a Boron - Carbide Aluminum Cermet: Experiments and Observations," *Mechanics of Materials*, Vol. 10, pp. 19-29, 1990.
4. **Ramesh, K.T.**, "The Short-Time Compressibility of EHD Lubricants," *Journal of Tribology, Transactions of the ASME*, Vol. 113, pp. 361371, 1991.
5. Coates, R.S. & **Ramesh, K.T.**, "The Rate - Dependent Deformation of A Tungsten Heavy Alloy," *Materials Science and Engineering A*, Vol. 145, pp. 159-166, 1991.
6. **Ramesh, K.T.**, & Coates, R.S., "Microstructural Influences on the Dynamic Response of Tungsten Heavy Alloys," *Metallurgical Transactions A*, Vol. 23A, pp. 2625-2630, 1992.
7. **Ramesh, K.T.**, & Clifton, R.J., "Finite Deformation Analysis of Pressure-Shear Plate Impact Experiments on Elastohydrodynamic Lubricants," *Journal of Applied Mechanics*, Vol. 59, No. 4, pp. 754-761, 1992.
8. Feng, R., & **Ramesh, K.T.**, "The Rheology of Lubricants at High Shear Rates," *Journal of Tribology, Transactions of the ASME*, Vol. 115, pp. 640 -649, 1993.
9. Bao, G., & **Ramesh, K.T.**, "Plastic Flow of a Tungsten-Based Composite under Quasi-Static Compression," *Acta Metallurgica et Materialia*, Vol. 41, No. 9, pp. 2711-2719, 1993.
10. Feng, R., & **Ramesh, K.T.**, "On the Compressibility of Elastohydrodynamic Lubricants," *Journal of Tribology*, Vol. 115, pp. 557-559, 1993.
11. **Ramesh, K.T.**, "On the Localization of Shearing Deformations in Tungsten Heavy Alloys," *Mechanics of Materials*, Vol. 17, pp. 165-173, 1994.

12. Chichili, D.R., & **Ramesh, K.T.**, "Dynamic Failure Mechanisms in a 6061-T6 Al/Al₂O₃ Metal-Matrix Composite," *International Journal of Solids and Structures*, Vol. 32, No. 17/18, pp. 2609-2626, 1995.
13. Yadav, S., Chichili, D.R., & **Ramesh, K.T.**, "The Mechanical Response of a 6061-T6 Al/Al₂O₃ Metal-Matrix Composite at High Rates of Deformation," *Acta Metallurgica*, Vol. 43, pp. 4453-4464, 1995.
14. **Ramesh, K.T.**, & Kelkar, N., "Technique for the Continuous Measurement of Projectile Velocities in Plate Impact Experiments," *Review of Scientific Instruments*, Vol. 66, No. 4, pp. 3034-3036, 1995.
15. S. Yadav & **Ramesh, K.T.**, "The Mechanical Properties of Tungsten-Based Composites at Very High Strain Rates," *Materials Science & Engineering A*, Vol. 203, pp. 140-153, 1995.
16. Y. Zhang & **Ramesh, K.T.**, "The Behavior of an Elastohydrodynamic Lubricant at Moderate Pressures and High Shear Rates," *Journal of Tribology*, Vol. 118, pp. 162-168, 1996.
17. **Ramesh, K.T.**, & Narasimhan, S., "Finite Deformations and the Dynamic Measurement of Radial Strains in Compression Kolsky Bar Experiments," *International Journal of Solids & Structures*, Vol. 33, No. 25, pp. 3723-3738, 1996.
18. Feng, R., **Ramesh, K.T.**, & Douglas, A.S. "An Analytical and Computational Investigation of High-Rate Rheometry," *Journal of Tribology*, Vol. 118, No. 3, pp. 601-607, 1996.
19. da Silva, M. & **Ramesh, K.T.**, "The Rate-Dependent Deformations of Porous Pure Iron," *International Journal of Plasticity*, Vol. 13, pp. 587-610, 1997.
20. da Silva, M. & **Ramesh, K.T.**, "The Rate-Dependent Deformation and Localization of Fully Dense and Porous Ti-6Al-4V," *Materials Science & Engineering A*, Vol. 232, pp. 11-22, 1997.
21. Chichili, D.R., **Ramesh, K.T.** & Hemker, K.J., "The High-Strain-Rate Response of Alpha-Titanium: Experiments, Deformation Mechanisms, and Modeling," *Acta Materialia*, Vol. 46, No. 3, pp. 1025-1043, 1998.
22. Yadav, S. & **Ramesh, K.T.**, "The Mechanical Behavior of Polycrystalline Hafnium: Strain Rate and Temperature Dependence," *Materials Science & Engineering A*, Vol. 246, pp. 265-281, 1998.
23. Zhang, Y. & **Ramesh, K.T.**, "On the Compressibility of a Glass-Forming Lubricant: Experiments and Molecular Modeling," *Journal of the Mechanics and Physics of Solids*, Vol. 46, No. 10, pp. 1699-1722, 1998.
24. Li, Y., & **Ramesh, K.T.**, "Influence of Particle Volume Fraction, Shape and Aspect Ratio on the Behavior of Particle-Reinforced Metal-Matrix Composites at High Rates of Strain," *Acta Materialia*, Vol. 46, No. 16, pp. 5633-5646, 1998.
25. Lennon, A.M., & **Ramesh, K.T.**, "A Technique for Measuring the Dynamic Behavior of Materials at High Temperatures," *International Journal of Plasticity*, Vol. 14, No. 12, pp. 1279-1292, 1998.
26. Chichili, D.R. & **Ramesh, K.T.**, "Recovery Experiments for Adiabatic Shear Localization: A Novel Experimental Technique," *Journal of Applied Mechanics*, Vol. 66, pp. 10-20, 1999.
27. Marra, S.P., **Ramesh, K.T.** & Douglas, A.S., "The Mechanical Properties of lead-titanate/polymer 0-3 Composites," *Composites Science & Technology*, Vol. 59, pp. 2163-2173, 1999.
28. Marra, S.P., **Ramesh, K.T.** & Douglas, A.S., "The Mechanical and Electromechanical Properties of Calcium-modified Lead Titanate/Poly(vinylidene fluoride-trifluoroethylene) 0-3 Composites," *Smart Materials and Structures*, Vol. 8, pp. 57-63, 1999.

29. Liu, Y., Li, Y., **Ramesh, K.T.**, & van Humbeeck, J., "High Strain Rate Deformation of Martensitic NiTi Shape Memory Alloy," *Scripta Materialia*, Vol. 41, No. 1, pp. 89-95, 1999.
30. Jia, D. Lennon, A.M., & **Ramesh, K.T.**, "High-Strain-Rate Pressure-Shear Recovery: A New Experimental Technique," *International Journal of Solids & Structures*, Vol. 37, No. 12, pp. 1679-1699, 2000.
31. Lennon, A.M., & **Ramesh, K.T.**, "The Thermoviscoplastic Response of Polycrystalline Tungsten in Compression," *Materials Science & Engineering A*, Vol. 276, pp. 9-21, 2000.
32. Li, Y., **Ramesh, K.T.** & Chin, E.S.C., "The Compressive Viscoplastic Response of an A359/SiCp Metal-Matrix Composite and of the A359 Aluminum Alloy Matrix," *International Journal of Solids and Structures*, Vol. 37, No. 51, pp. 7547-7562, 2000.
33. Li, Y., **Ramesh, K.T.** & Chin, E.S.C., "Viscoplastic Deformations and Compressive Damage in an A359/SiC₂ Metal-Matrix Composite," *Acta Materialia*, Vol. 48, pp. 1563-1573, 2000.
34. Jia, D., **Ramesh, K.T.** & Ma, E., "Failure Mode and Dynamic Behavior of Nanophase Iron under Compression," *Scripta Materialia*, Vol. 42, pp. 73-78, 2000.
35. Li, Y., **Ramesh, K.T.** & E.S.C. Chin, "Dynamic Characterization of Layered and Graded Structures under Impulsive Loading," *International Journal of Solids and Structures*, Vol. 38 (34-35), pp. 6045-6061, 2001.
36. Jia, D., **Ramesh, K.T.**, Ma, E., Lu, L. & Lu, K., "Compressive Behavior of an Electrodeposited Nanostructured Copper at Quasistatic and High Strain Rates," *Scripta Materialia*, Vol. 45, pp. 613-620, 2001.
37. Marra, S.P., **Ramesh, K.T.** & Douglas, A.S., "Mechanical characterization of active poly(vinyl alcohol)-poly(acrylic acid) gel," *Materials Science & Engineering C*, Vol. 14, pp. 25-34, 2001.
38. Xing, L.-Q., Li, Y., **Ramesh, K.T.**, Li, J. & Hufnagel, T.C., "Enhanced plastic strain in Zr-based bulk amorphous alloys," *Physical Review B*, Vol. 64 (18): Article No. 180201, 2001.
39. Jia, D., Wang, Y.M., **Ramesh, K.T.**, Ma, E., Zhu, Y.T. & Valiev, R.Z., "Deformation behavior of ultra-fine-grained titanium," *Applied Physics Letters*, Vol. 79, No. 5, pp. 611-613, 2001.
40. Liu, Y., Li, Y., & **Ramesh, K.T.**, "Rate Dependence Of Deformation Mechanisms in a Shape Memory Alloy," *Philosophical Magazine A*, Vol. 28, No. 12, pp. 2461-2473, 2002.
41. Liu, Y., Li, Y., Xie, Z., & **Ramesh, K.T.**, "Dynamic deformation of shape-memory alloys: evidence of domino detwinning?," *Philosophical Magazine Letters*, Vol. 82, No. 9, pp. 511-517, 2002.
42. Hufnagel, T.C., Xing, L.-Q., Li, Y., Jia, D., & **Ramesh, K.T.**, "Deformation and Failure of Bulk Amorphous Zr₅₀Ti₂₀Cu₁₀Ni₁₀Al₁₀ under quasi-static and dynamic compression," *Journal of Materials Research*, Vol. 17, Issue 6, pp. 1441-1445, 2002.
43. Marra, S.P., **Ramesh, K.T.** & Douglas, A.S., "The actuation of a biomimetic poly(vinyl alcohol)-poly(acrylic acid) gel," *Philosophical Transactions of the Royal Society of London A*, Vol. 360, pp. 175-198, 2002.
44. **Ramesh, K.T.**, "Effects of High Rates of Loading on the Deformation Behavior and Failure Mechanisms of HCP Metals and Alloys," *Metallurgical and Materials Transactions*, Vol. 33A, pp. 927-935, 2002.
45. Wei, Q., Jia, D., **Ramesh, K.T.** and Ma, E., "Evolution and Microstructure of Shear Bands in Nanostructured Fe," *Applied Physics Letters*, Vol. 81, No. 7, pp. 1240-1242, 2002.

46. Li, Y. & **Ramesh, K.T.**, "Numerical Analysis of the Direct Tension Kolsky Bar," *Key Engineering Materials*, Vol. 243-244, pp. 153-158, 2002.
47. Li, Y., **Ramesh, K.T.**, & Chin, E.S.C., "Determination of the Dynamic Fracture Initiation Toughness of Metal-Ceramic Composites," *Key Engineering Materials*, Vol. 243-244, pp. 57-62, 2002.
48. Wu, X.Y., **Ramesh, K.T.** & Wright, T.W., "The Dynamic Growth of a Single Void in a Viscoplastic Material under Transient Hydrostatic Loading," *Journal of the Mechanics and Physics of Solids*, Vol. 51, No. 1, pp. 1-26, 2003.
49. Marra, S.P., **Ramesh, K.T.** & Douglas, A.S., "Characterization and Modeling of Compliant Active Materials," *Journal of the Mechanics and Physics of Solids*, Volume 51, Issue 9, pp. 1723-1743, 2003.
50. Wu, X.Y., **Ramesh, K.T.** and Wright, T.W., "The Effects of Thermal Softening and Heat Conduction on the Dynamic Growth of Voids," *International Journal of Solids and Structures*, Vol. 40, No. 17, pp. 4461-4478, 2003.
51. Jia, D., **Ramesh, K.T.** and Ma, E., "Effects of Nanocrystalline and Ultrafine Grain Sizes on Constitutive Behavior and Shear Bands in Iron," *Acta Materialia*, vol. 51, No. 12, pp. 3495-3509, 2003.
52. Gu X, Jiao T, Kecskes LJ, Woodman RH, Fan C, **Ramesh KT**, Hufnagel TC, "Crystallization and mechanical behavior of (Hf, Zr)-Ti-Cu-Ni-Al metallic glasses," *Journal of Non-Crystalline Solids*, Vol. 317, Nos. 1-2, pp. 112-117, 2003.
53. Q. Wei, T. Jiao, S.N. Mathaudhu, E. Ma, K.T. Hartwig and **K. T. Ramesh**, "Microstructure and Mechanical Properties of Tantalum after Equal Channel Angular Extrusion (ECAE)," *Materials Science and Engineering A*, Vol. 358, pp. 266-272, 2003.
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55. Wei, Q., Jiao, T., **Ramesh, K.T.** & Ma, E., "Processing and mechanical properties of nanostructured vanadium under quasi-static and dynamic compression," *Scripta Materialia*, Vol. 50, No. 3, pp. 359-364, 2004.
56. Lennon, A.M. & **Ramesh, K.T.**, "The Influence of Crystal Structure on the Dynamic Behavior of Materials at High Temperatures," *International Journal of Plasticity*, Vol. 20, pp. 269-290, 2004.
57. Li, Y., **Ramesh, K.T.**, & Chin, E.S.C., "Comparison of the Plastic Deformation and Failure of A359/SiC and 6061-T6/Al₂O₃ Metal Matrix Composites under Dynamic Tension," *Materials Science and Engineering A*, Vol. 371, Issues 1-2, pp. 359-370, 2004.
58. Chichili, D.R., **Ramesh, K.T.** & Hemker, K.J., "Adiabatic Shear Localization in Alpha-Titanium: Experiments, Modeling and Microstructural Evolution," *Journal of Mechanics and Physics of Solids*, Vol. 52, pp. 1889-1909, 2004.
59. Glynn, M.L., Chen, M.W., **Ramesh, K.T.** & Hemker, K.J., "The influence of a martensitic phase transformation on stress development in thermal barrier coating systems," *Metallurgical and Materials Transactions A*, Vol. 35, No. 8, pp. 2281-2288, 2004.
60. Wang, H. and **Ramesh, K.T.**, "Dynamic Strength and Fragmentation of Hot-Pressed Silicon Carbide under Uniaxial Compression," *Acta Materialia*, Vol. 52, No. 2, pp. 355-367, 2004.

61. Q. Wei, Y.M. Wang, **K. T. Ramesh** and E. Ma, "Effects of nanocrystalline and ultrafine grain sizes on the strain rate sensitivity: fcc versus bcc metals," *Materials Science & Engineering A*, Vol. 381, Nos. 1-2, pp 71-79, 2004.
62. Q. Wei, L. Kecskes, T. Jiao, K. T. Hartwig, **K. T. Ramesh** and E. Ma, "Adiabatic shear banding in ultrafine-grained Fe processed by severe plastic deformation," *Acta Materialia*, Vol. 52, No. 7, pp. 1859-1869, 2004.
63. Jiao, T., Li, Y., **Ramesh, K.T.** & Wereszczak, A, "High Rate Response and Dynamic Failure of Structural Ceramics," *International Journal of Applied Ceramic Technology*, Vol. 1, No. 3, pp. 243-253, 2004.
64. Y. Li, **K.T. Ramesh**, & E.S.C. Chin, "The Mechanical Response of an A359/SiCp MMC and the A359 Aluminum Matrix to Dynamic Shearing Deformations," *Materials Science & Engineering A*, Vol. 382, pp. 162-170, 2004.
65. Zhang, H., **K.T. Ramesh** and E.S.C. Chin, "High Strain Rate Response of Aluminum 6092/B.C Composites," *Materials Science & Engineering A*, Vol. 384, Nos. 1-2, pp. 26-34, 2004.
66. Jia, D. & **Ramesh, K.T.**, "A Rigorous Assessment of the Benefits of Miniaturization in the Kolsky Bar System," *Experimental Mechanics*, Vol. 44, No. 5, pp. 445-454, 2004.
67. Jiao, T., L.J. Kecskes, T.C. Hufnagel & **K.T. Ramesh**, "Deformation and Failure of $Zr_{0.7}Nb_{0.3}Al_{0.1}Cu_{0.1}Ni_{0.1}/W$ Particle Composites under Quasistatic and Dynamic Compression," *Metallurgical and Materials Transactions*, Vol. 35, No. 11, pp. 3439-3444, 2004.
68. R. T. Ott, F. Sansoz, J. F. Molinari, J. Almer, **K. T. Ramesh**, and T. C. Hufnagel, "Micromechanics of deformation of metallic-glass-matrix composites from *in situ* synchrotron strain measurements and finite element modeling," *Acta materialia*, Vol. 53, pp. 1883-1893, 2005.
69. S.R. Bilyk, **K.T. Ramesh** & T.W. Wright, "Finite Deformations of Metal Cylinders Subjected to Electromagnetic Fields and Mechanical Forces," *Journal of Mechanics and Physics of Solids*, Vol. 53, pp. 525-544, 2005.
70. Wei, Q., **Ramesh, K.T.**, Ma, E., Kecskes, L.J., Dowding, R.J., Kazykhanov, V.U. and Valiev, R.Z., "Plastic Flow Localization in Bulk Tungsten with Ultrafine Microstructure," *Applied Physics Letters*, Vol. 86, 101907, 2005.
71. Zhou, F., J.F. Molinari & **K.T. Ramesh**, "A Cohesive-Model Based Fragmentation Analysis: Effects of Strain Rate and Initial Defects Distribution," *International Journal of Solids and Structures*, Vol. 42, pp. 5181-5207, 2005.
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74. Q. Wei, T. Jiao, **K.T. Ramesh**, E. Ma, L.J. Kecskes, L. Magness, R. Dowding, V.U. Kazykhanov & R.Z. Valiev, "Mechanical behavior and dynamic failure of high-strength ultrafine grained tungsten under uniaxial compression," *Acta Materialia*, Vol. 54, No. 1, pp. 77-87, 2006.
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76. Schuster, B.E., Wei, W., Zhang, H. and **Ramesh, K.T.**, "Microcompression of Nanocrystalline Nickel," *Applied Physics Letters*, **88**, No. 103112, 2006.
77. Zhou, F., T.W. Wright & **K.T. Ramesh**, "The formation of multiple adiabatic shear bands", *Journal of Mechanics and Physics of Solids*, Vol. 54, pp. 1376-1400, 2006.
78. Zhou, F., Jean-Francois Molinari & **K.T. Ramesh**, "Analysis of the brittle fragmentation of an expanding ring", *Computational Material Sciences*, Vol. 37, pp. 74-85, 2006.
79. Zhou, F., J.F. Molinari & **K.T. Ramesh**, "Effects of Material Properties and Strain Rate on the Fragmentation of Brittle Materials," *International Journal of Fracture*, Vol. 139, pp. 169-196, 2006.
80. Paliwal, B., **Ramesh, K.T.** & McCauley, J.W., "Direct observation of the dynamic compressive failure of a transparent polycrystalline ceramic (AlON)," *Journal of the American Ceramic Society*, Vol. 89, No. 7, pp. 2128-2133, 2006.
81. Zhou, F., **Ramesh, K.T.** & Molinari, J.F., "Characteristic Fragment Size Distribution of Dynamically Expanding Rings," *Applied Physics Letters*, Vol. 88, No. 26: Art. No. 261918, 2006.
82. Joshi, S.P., **Ramesh, K.T.**, Han, B.Q., and Lavernia, E.J. "Modeling the Constitutive Response of Bimodal Metals," *Metallurgical & Materials Transactions*, Vol. 37A, pp. 2397-2404, 2006.
83. Q. Wei, **K.T. Ramesh**, B.E. Schuster, L.J. Kecskes & R.J. Dowding, "Nanoengineering Opens a New Era for Tungsten as Well," *Journal of Metals*, pp. 40-44, September 2006.
84. H. Zhang, M.W. Chen, **K.T. Ramesh**, J. Ye, J. Schoenung, E.S.C. Chin, "Tensile Behavior and Dynamic Failure of Aluminum 6092/B.C Composites," *Materials Science & Engineering A*, Vol. 433, pp. 70-82, 2006.
85. Volokh, K. Y. and **Ramesh, K.T.**, "An approach to multi-body interactions in a continuum-atomistic context: application to analysis of tension instability in carbon nanotubes," *International Journal of Solids and Structures*, Vol. 43, Nos. 25-26, pp. 7609-7627, 2006.
86. Q. Wei, T. Jiao, **K.T. Ramesh**, E. Ma, L.J. Kecskes, L. Magness, R. Dowding, V.U. Kazykhanov & R.Z. Valiev, "Microstructure and mechanical properties of super-strong nanocrystalline tungsten processed by high-pressure torsion," *Acta Materialia*, 54, No. 15, pp. 4079-4089, 2006.
87. R.T. Ott, F. Sansoz, T. Jiao, D. Warner, C. Fan, J.-F. Molinari, **K.T. Ramesh** and T.C. Hufnagel, "Yield criteria and strain-rate behavior of $Zr_{52}Cu_{18}Ni_{12}Ta_{10}Al_{8}$ metallic-glass-matrix composites" *Metallurgical & Materials Transactions*, Vol. 37A, No. 11: 3251-3258, 2006.
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89. Li, Y. & **Ramesh, K.T.**, "An Optical Technique for Accurate Measurement of Material Properties in the Tension Kolsky Bar," *International Journal of Impact Engineering*, Volume 34, No. 4, pp. 784-798, 2007.
90. Li, Y., **Ramesh, K.T.**, & Chin, E.S.C., "Plastic Deformation and Failure in A359 Aluminum and an A359/SiC, MMC under Quasistatic and High-Strain-Rate Tension," *Journal of Composite Materials*, Vol. 41, No. 1, pp. 27-41, 2007.
91. H. Zhang, S.P. Joshi, **K.T. Ramesh**, J. Ye, J.M. Schoenung, E.S.C. Chin & G. A. Gazonas, "Superlightweight Nanoengineered Aluminum for Strength under Impact," *Advanced Engineering Materials*, Volume 9, No. 5, pp. 355-359, 2007.
92. H. Saraf, **K.T. Ramesh**, A.M. Lennon, A.C. Merkle & J.C. Roberts, "Mechanical Properties of Soft

- Human Tissues under Dynamic Loading," *Journal of Biomechanics*, Vol. 40, pp. 1960–1967, 2007.
93. H. Saraf, **K.T. Ramesh**, A.M. Lennon, A.C. Merkle & J.C. Roberts, "Measurement of the Dynamic Bulk and Shear Response of Soft Human Tissues," *Experimental Mechanics*, Vol. 47, pp. 439-449, 2007.
94. B. Paliwal & **K.T. Ramesh**, "Effect of crack growth dynamics on the rate sensitive behavior of hot-pressed boron carbide," *Scripta materialia*, Vol. 57, pp. 481–484, 2007.
95. S. P. Joshi & **K.T. Ramesh**, "An enriched continuum model for the design of a hierarchical composite," *Scripta materialia*, Volume 57, No. 9, pp. 877-880, 2007.
96. B.E. Schuster, Q. Wei, M.H. Ervin, S. Hruszkewycz, M.K. Miller, T.C. Hufnagel & **K.T. Ramesh**, "Bulk and Micro-Scale Compressive Properties of a Pd-based Metallic Glass," *Scripta materialia*, Volume 57, No. 6, pp. 517-520, 2007.
97. S.P. Joshi and **K.T. Ramesh**, "Rotational Diffusion and Grain-Size Dependent Shear Instability in Nanostructured Materials," *Acta materialia*, Vol. 56, pp. 282–291, Jan. 2008.
98. B. Paliwal & **K.T. Ramesh**, "An interacting micro-crack damage model for failure of brittle materials under compression," *Journal of the Mechanics and Physics of Solids*, 56, pp. 896–923, Mar. 2008.
99. J.R. Greer, H. Espinosa, E. Nadgorny & **K.T. Ramesh**, "Comment on "Effects of focused ion beam milling on the nanomechanical behavior of a molybdenum-alloy single crystal"," *Applied Physics Letters*, 92, No. 096101, Feb. 2008.
100. T.W. Wright & **K.T. Ramesh**, "Dynamic Void Nucleation and Growth in Solids: A Self-Consistent Statistical Theory," *Journal of the Mechanics and Physics of Solids*, 56, pp. 336–359, 2008.
101. R. Kraft, J. F. Molinari and **K. T. Ramesh**, "Computational Micromechanics of Dynamic Compressive Loading of Brittle Polycrystalline Material Using a Distribution of Grain Boundary Properties," *Journal of the Mechanics and Physics of Solids*, Vol. 56, No. 8, pp. 2618-2641, Aug. 2008.
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59. P. K. Swaminathan, R. C. Brown, and **K. T. Ramesh**. "Predicting optical signatures from a simple impact experiment," Frank Schäfer and Stefan Hiermaier (ed.), Proceedings of the 11th Hypervelocity Impact Symposium, Freiburg, Germany, April 11-15, 2010, Schriftenreihe Forschungsergebnisse aus der Kurzzeitdynamik, Band 20, Fraunhofer Verlag, pp. 600-610, 2011. ISBN 978-3-8396-0280-5.
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67. Tonge, A.L., Leavy, R., LaSalvia, J., **Ramesh, K.T.** & Brannon, R., "A Quantitative Approach to Comparing High Velocity Impact Experiments and Simulations using XCT Data," HVIS 2015.
68. Hogan, J.D., Plescia, J., El Mir, C., & **K.T. Ramesh**, "Dynamic Brittle Fragmentation: Probing the Byproducts of Hypervelocity Impact in Space," HVIS 2015.

PATENTS

1. *Alloy with Metallic Glass and Quasicrystalline Properties*, L.-Q. Xing, T. C. Hufnagel and **Ramesh, K.T.**, U. S. Patent 6692590 (issued February 17, 2004).
2. *Shear localization in nanostructured and/or ultrafine grained heavy metals and the method to make the same*, Q. Wei, E. Ma, R.J. Dowding, L. Kecskes, and **Ramesh, K.T.**, U.S. Patent pending.
3. *Manufacturing and microstructural design of tri-modal metal matrix composites with ultra-high quasistatic and dynamic flow strength*, J.M. Schoenung, Jichun Ye, Ernest S.C. Chin, J. Giglio, T. Delahanty, **K.T. Ramesh** and Haitao Zhang, U.S. Patent pending.

PRESENTATIONS

Invited Seminars, Plenary and Keynote Lectures:

1. *Naval Research Laboratory*. "Materials in Extremis." Washington, DC. May, 2016.
2. *Observatoire de la Cote d'Azur*. "Thermal Fatigue and Regolith Formation on Airless Bodies." Nice, France. July, 2016.
3. *Applied Physics Laboratory*, Johns Hopkins University. "Keeping Your Head in the Game: The Dynamics of Traumatic Brain Injury." Laurel, MD, May 2016.
4. *UK Dynamic Materials Meeting*, Defense Science and Technology Laboratory, Wiltshire, England, Sept. 2015.
5. *Ohio State University*, Columbus, OH, Sept. 2015. "The Multiscale Mechanics of Traumatic Brain Injury."
6. *Dynamics of Heterogeneous Materials Workshop*, Arlington, VA, Sept. 2015. "Dynamics of Heterogeneous Material."
7. *11th International DYMAT Conference*, Lugano, Switzerland, Sept. 2015. "Twinning in magnesium under

- dynamic loading.”
8. *Society for Experimental Mechanics 2015 Conference and Exposition, Murray Lecture*, Costa Mesa, CA, June 2015. “Dynamics across the Scales: Rocks, Shocks and Asteroids.”
 9. *ASME 2014 International Mechanical Engineering Congress & Exposition, Drucker Medalist Symposium*, Montreal, Canada, Nov. 2014. “The Dynamics of Twinning and the High-Strain Rate Behavior of Magnesium.”
 10. *University of Utah, Mechanical Engineering Distinguished Seminar Series*, Salt Lake City, UT, Nov. 2014. “Keep your Head in the Game: The Mechanics of Traumatic Brain Injury.”
 11. Plenary Lecture, *Hopkinson Centenary Conference*, Cambridge, UK, Sept. 2014. “Scaling and Dynamics Applied to Materials and Asteroids.”
 12. *Engineering Innovation, Johns Hopkins University*, Baltimore, MD, July 2014. “Rocks, Shocks and Asteroids.”
 13. *Predictive Integrated Structural Materials Science Workshop, University of Michigan*, Ann Arbor, MI, May 2014 “The Materials in Extreme Dynamic Environments (MEDE) CRA.”
 14. *University of Texas*, Austin, TX, April 2014. “Keep your Head in the Game: The Mechanics of Traumatic Brain Injury in Sports.”
 15. *Malcolm G. McLaren Distinguished Lecture Symposium, Rutgers University*, New Brunswick, NJ, April 2014. “The Swift and the Strong: The Strength and Failure of Ceramics.”
 16. *Asteroids Comets Meteors*, Helsinki, Jun. 30 – Jul. 4, 2014. “A new material model for simulating large impacts on rocky bodies.”
 17. *Case Western Reserve University*, Cleveland, OH, March 2014. “Keep Your Head in the Game: The Mechanics of Traumatic Brain Injury in Sports.” With R. Wright and A. Fournier.
 18. *Johns Hopkins University, SI4 Mechanical Engineering Seminar Series*, Baltimore, MD, Jan. 2014. “Keep your Head in the Game: The Mechanics of Traumatic Brain Injury in Sports.”
 19. *4th International Conference on Impact Loading of Lightweight Structures*, Cape Town, SA, Jan. 2014. “Impact Loading of Soft Structures: the dominant cause of injury to the human brain.”
 20. *International Workshop on Computational Mechanics and Materials*, Singapore, October 2013. “Computational Mechanics Approaches to Injury of the Human Brain.”
 21. *APS Shock Compression of Condensed Matter*, Seattle, July 2013. “High rate deformation and failure mechanisms in brittle materials.”
 22. *North Carolina A&T University*, Greensboro, NC, May 2013: “Rocks, Shocks and Asteroids.”
 23. *Society of Brain Mapping and Therapeutics Congress*, Baltimore, May 2013: “A Multiscale Computational Approach to Estimating Axonal Damage under Inertial Loading of the Head.”
 24. *I.I. Glass Memorial Lecture, University of Toronto Institute of Aerospace Studies*, Toronto, Canada, May 2013: “Rocks, Shocks and Asteroids.”
 25. *University of Wisconsin-Madison, Department of Engineering Physics*, Madison, WI, April 2013: “Rocks, Shocks and Asteroids.”
 26. *Northwestern University, Department of Mechanical Engineering*, Chicago, IL, April 2013: “Rocks, Shocks and Asteroids.”
 27. *University of Notre Dame, Department of Mechanical Engineering*, South Bend, IN, April 2013: “Rocks, Shocks and Asteroids.”

28. *Michigan State University, Department of Mechanical Engineering*, East Lansing, MI, April 2013: “Keep Your Head in the Game: The Mechanics of Traumatic Brain Injury.”
29. *University of Michigan, Department of Mechanical Engineering*, Ann Arbor, MI, April 2013: “Keep Your Head in the Game: The Mechanics of Traumatic Brain Injury.”
30. *University of Houston, Department of Mechanical Engineering*, Houston, TX, March 2013: “Rocks, Shocks and Asteroids: The Importance of Being Fractured.”
31. *International Conference on Advanced Ceramics and Composites*, Daytona Beach, FL, January 2013: “Armor Ceramics in Extreme Dynamic Environments.”
32. *Washington University at St. Louis, Department of Mechanical Engineering*, St. Louis, MO, November 2012: “Soft, Squishy and Fibrous: The Mechanics of Traumatic Brain Injury.”
33. *Society of Engineering Science, Georgia Tech*, Atlanta, GA, October 2012: “The Secret Lives of Twins.”
34. *ASME International Mechanical Engineering Conference & Exposition*, Houston, TX, November 2012: “Megamechanics: The Dynamic Failure of Large Bodies.”
35. *University of Minnesota, Department of Aerospace Engineering and Mechanics*, Minneapolis, MN, October 2012: “Rocks, Shocks and Asteroids: The Importance of Being Fractured.”
36. *Iowa State University, Department of Aerospace Engineering*, Ames, IA, October 2012: “Soft, Squishy and Fibrous: The Mechanics of Traumatic Brain Injury.”
37. *Illinois Institute of Technology, Department of Mechanical Engineering*, Chicago, IL, October 2012: “Rocks, Shocks and Asteroids: The Importance of Being Fractured.”
38. *University of Illinois at Urbana-Champaign, Department of Mechanical Engineering*, Urbana, IL, October 2012: “Soft, Squishy and Fibrous: The Mechanics of Traumatic Brain Injury.”
39. *Purdue University, Department of Mechanical Engineering*, West Lafayette, IN, October 2012: “Soft, Squishy and Fibrous: The Mechanics of Traumatic Brain Injury.”
40. *International Workshop on Computational Mechanics and Materials*, Baltimore, MD, September 2012: “Going to Extremes.”
41. *University of Rhode Island, Department of Mechanical Engineering*, Kingston, RI, April 2012: “Rocks, Shocks and Asteroids: Applications of Dynamic Fracture.”
42. *TMS Annual Meeting*, Orlando, FL, Mar. 2012: “A Model for Diffuse Axonal Injury.”
43. *Southwest Research Institute*, San Antonio, TX, December 2011: “Rocks, Shocks and Asteroids: The Dynamic Failure of Brittle Materials.”
44. *Brown University, Division of Engineering*, Providence, RI, September 2011: “Rocks, Shocks and Asteroids: The Importance of Being Fractured.”
45. *Pennsylvania State University, Department of Materials Science & Engineering*, State College, PA, October 2011: “Rocks, Shocks and Asteroids: The Dynamic Failure of Brittle Materials.”
46. *IUTAM Symposium on Impact Biomechanics in Sport*, University College, Dublin, July 2011: “Adding Insult to Injury: The Dynamics of Human Tissues.”
47. *State University of New York – Stony Brook*, Department of Mechanical Engineering, May 2011: “Soft, Squishy and Fibrous: A Cellular-Level Injury Criterion for Traumatic Brain Injury in Humans.”
48. *National University of Singapore*, Department of Mechanical Engineering, January 2011: “Soft, Squishy and

- Fibrous: A Cellular-Level Injury Criterion for Traumatic Brain Injury in Humans.”
49. *Caltech*, Graduate Aeronautical Laboratories, November 2010: “Breaking Worlds: Life, Death, and the Importance of Being Fractured.”
 50. *Materials Science & Technology, Houston, TX*, October 2010: “The High-Strain-Rate Behavior of Heterogeneous Materials: Experiments and Models.”
 51. *47th Army Sagamore Materials Research Conference*, St. Michaels, MD, June 2010: “The High Strain Rate Behavior and Dynamic Failure of Lightweight Metals.”
 52. *Army Aluminum Armor Workshop*, Baltimore, MD, May 2010: “The Strengthening of Aluminum: Strain Rate and Grain Size Effects.”
 53. *ASEI*, Columbia, MD, June 20 2010: “The Small, the Swift and the Strong.”
 54. *NASA Goddard*, Planetary Geodynamics Seminar, Greenbelt, MD, April 2010: “Strength, Impact and Fragmentation of Geophysical Materials.”
 55. *TMS Spring Conference*, Seattle, WA, February 2010: “Grain Size Effects on the Rate Sensitivity of FCC Metals.”
 56. *Carnegie-Mellon University*, Department of Civil Engineering, Pittsburgh, PA, October 2009: “The Small, the Swift and the Strong.”
 57. *University of Florida*, Department of Mechanical Engineering, Gainesville, FL, October 2009: “The Processes of Massive Dynamic Failure.”
 58. *National University of Singapore, Singapore*, Department of Mechanical Engineering, July 2009: “The Small, the Swift and the Strong.”
 59. *Society of Experimental Mechanics 2009*, Albuquerque, NM, June 2009: Keynote Lecture, “The Processes of Massive Dynamic Failure.”
 60. *Johns Hopkins University Applied Physics Laboratory*, June 2009: “The Small, the Swift and the Strong.”
 61. *Shock Compression of Condensed Matter*, Nashville, TN, June 2009: “Length Scales and Nanomaterials.”
 62. *ONR Materials Division*, April 20, 2009: “The Mechanics of Nanomaterials.”
 63. *Rutgers University*, Department of Mechanical and Aerospace Engineering, Piscataway, NJ, November 2008, “The Processes of Massive Dynamic Failure.”
 64. *University of Michigan*, Department of Mechanical Engineering, Ann Arbor, MI, October 2008, “The Processes of Massive Dynamic Failure.”
 65. *Illinois Institute of Technology*, Department of Mechanical and Aerospace Engineering, Chicago, IL, October 2008: “The Small, the Swift and the Strong.”
 66. *EPFL*, Department of Civil Engineering and Computational Solid Mechanics Laboratory, Lausanne, Switzerland, October 2008: “The Small, the Swift and the Strong.”
 67. *ETH Zurich*, Zurich, Switzerland, October, 2008: “The Small, the Swift and the Strong.”
 68. *18th DYMAT Technical Meeting: The Behavior of Bulk Nanomaterials and Metallic Glasses under Dynamic Loading*, Bourges, France, September, 2008: “Dynamic Behavior of Nanomaterials.” With Q. Wei and S.P. Joshi.
 69. *18th DYMAT Technical Meeting: The Behavior of Bulk Nanomaterials and Metallic Glasses under Dynamic Loading*, Bourges, France, September, 2008: “The Behavior of Bulk Nanomaterials and Metallic Glasses under Dynamic Loading.” With B.E. Schuster.

70. *Multi-Scale Materials Behavior in Ultra-High Loading Rate Environments Workshop*, Towson, MD, September, 2008. “The High-Strain-Rate Deformation and Dynamic Failure of Materials.”
71. *2008 SEM International Congress & Expo on Experimental & Applied Mechanics*, Orlando, FL, June, 2008: “Deformation Mechanisms in Nanomaterials,” with S.P. Joshi, E. Huskins & B. Cao.
72. *Shock and Impact 2007*, Keynote Lecture, Beijing, China, October 2007: “Dynamic Failure in Materials and Structures under Impact Loading.”
73. *Northwestern Polytechnical University*, Xi’an, China, October 2007: “The Processes of Massive Dynamic Failure.”
74. *University of Nebraska*, Department of Engineering Mechanics, Lincoln, NE, October 2007: “The Small, the Swift and the Strong.”
75. *Johns Hopkins University*, Department of Physics and Astronomy, Baltimore, MD, November 2007: “The Small, the Swift and the Strong.”
76. *Johns Hopkins University*, Department of Mechanical Engineering, Baltimore, MD, September 2007: “The Small, the Swift and the Strong.”
77. *Nanomaterials for Defense Applications*, San Diego CA, April 2007: “The High-Strain-Rate Properties of Nanostructured Metals.”
78. *Michigan Technological University*, Department of Mechanical Engineering, Houghton MI, April 2007: “The Processes of Massive Dynamic Failure.”
79. *Army Symposium on Solid Mechanics*, Keynote Lecture, Baltimore, MD, April 2007: “The Small, the Swift and the Strong: Observations in Solid Mechanics.”
80. *George Irwin Symposium, University of Maryland*, March 20, 2007: “The Processes of Massive Dynamic Failure.”
81. *University of Cyprus, Nicosia, Cyprus*, October 25, 2006: “Feeling the Impact: The Dynamics of Human Tissues.”
82. *Indian Institute of Science*, Bangalore, India, July 5, 2006: “The Effects of Microstructure and Nanostructure on the Mechanical Behavior of Heterogeneous Metals.”
83. *Lawrence Livermore National Laboratory*, Livermore, CA, March 23, 2006: “The High-Strain-Rate Deformation of Structural and Nanocrystalline Metals.”
84. *Sandia National Laboratory*, Albuquerque, NM, March 22, 2006: “The High-Rate Failure of Ceramics: Direct Visualization and Modeling.”
85. *ARO Ceramics Damage Workshop*, VA, Feb. 14-15, 2006: “Ceramic Damage under Dynamic Loading: Direct Visualization and Modeling.”
86. *Nanosecurity 2005, Max Planck Institut Halle*, October 24, 2005: “The Mechanical Behavior of Nanometals and Nanoceramics for Impact Applications.”
87. *General Electric Global Research*, Niskayuna, September 23, 2005: “The Effects of Microstructure and Nanostructure on the Mechanical Behavior of Heterogeneous Metals.”
88. *Naval Surface Warfare Center, ONR*, Feb. 7, 2005: “Void Nucleation and Growth in Shock Loading.”
89. *Massachusetts Institute of Technology*, Mechanical Engineering, May 9, 2005: “Feeling the Impact: The Dynamics of Human Tissues.”

90. *University of Illinois*, Mechanical & Industrial Engineering, March 28, 2005: “The Mechanical Behavior of Nanostructured Metals.”
91. *Brown University*, Providence, RI, October 25, 2004: “The Mechanical Behavior of Nanostructured Metals.”
92. *Keynote Lecture, International Workshop on Computational Mechanics of Materials*, Goa, India, September 23, 2004. “The Dynamic Fragmentation of Brittle Materials.”
93. *General Electric Jack Welch Research Center*, Bangalore, India, Sept. 21, 2004. “Mechanical Behavior of Nanostructured Metals.”
94. *General Electric Jack Welch Research Center*, Bangalore, India, Sept. 21, 2004. “The High Strain Rate Response of Engineering and Armor Ceramics.”
95. *Georgia Institute of Technology*, Mechanical Engineering and Materials Science Joint Seminars, Atlanta, GA, April 15, 2004: “Mechanical Behavior of Nanostructured Metals.”
96. *Johns Hopkins Applied Physics Laboratory*, Laurel, MD, March 25, 2004: “Dynamic Failure and Fragmentation.”
97. *Sectional Lecture, Dynamic Behavior of Materials Symposium, International Conference on Materials*, Geneva, Switzerland, May 2003: “The High-strain-rate Response of Ultra-Fine-Grained Metals.” With Q. Wei and E. Ma.
98. *China Institute of Mechanics*, Beijing, China, October 14, 2003: “Mechanical Behavior of Nanostructured Metals.”
99. *Beijing Institute of Technology*, Beijing, China, October 14, 2003: “The High Strain Rate Response of Engineering and Armor Ceramics.”
100. *Northwestern Polytechnical University*, Xian, China, October 9, 2003: “The High-Strain-Rate Response of Nanostructured Metals.”
101. *University of Cambridge*, Cavendish Laboratory, May 15, 2003: “Rapid Deformation Studies of Bulk Metallic Glasses.”
102. *University of Cambridge*, Cavendish Laboratory, February 27, 2003: “High-Strain-Rate Deformations and Adiabatic Shear Bands in BCC and HCP Metals.”
103. *Ernst Mach Institute*, Freiburg, Germany, February 14, 2003: “The Dynamic Failure of Advanced Materials.”
104. *University of Cambridge*, Cavendish Laboratory, February 10, 2003: “The Dynamic Failure of Advanced Materials.”
105. *Royal Military College of Science*, Shrivenham, UK, February 12, 2003: “The Dynamic Failure of Advanced Materials.”
106. *University of Illinois at Urbana-Champaign*, Department of Aeronautical and Astronautical Engineering, December 2, 2002: “Dynamic Failure Mechanisms in Nanostructured Metals and Bulk Metallic Glasses.”
107. *University of Cambridge*, Department of Engineering, Cambridge, UK, November 15, 2002: “From Microstructures to Nanostructures: The Behavior of Materials at High Strain Rates.”
108. *University of Cambridge*, Cavendish Laboratory PCS Colloquium, Cambridge, UK, October 17, 2002: “The Deformation and Failure of Metal-Ceramic Composites under Very High Rates of Loading.”
109. *Texas A&M University*, College Station, TX, March 22, 2002: “From Microstructures to Nanostructures: The Behavior of Materials at High Strain Rates.” Southwest Mechanics Lecture Series.

110. *University of Texas at Arlington*, Arlington, TX, March 24, 2002: “From Microstructures to Nanostructures: The Behavior of Materials at High Strain Rates.” Southwest Mechanics Lecture Series.
111. *Southern Methodist University*, Dallas, TX, March 25, 2002: “From Microstructures to Nanostructures: The Behavior of Materials at High Strain Rates.” Southwest Mechanics Lecture Series.
112. *Tulane University*, New Orleans, LA, March 26, 2002: “Constitutive Response of Active Polymer Gels as Analogs to Biological Materials.” Southwest Mechanics Lecture Series.
113. *University of Delaware*, Wilmington, DE, February 22, 2002: “From Microstructures to Nanostructures: The High-Rate Response of Materials.”
114. *Drexel University*, Philadelphia, PA, January 2001: “High-Strain-Rate Deformations and Adiabatic Shear Bands in BCC and HCP Metals.”
115. *Michigan Technological University*, Houghton, MI, October 2000: “Constitutive Response Of Active Polymer Gels as Analogs to Biological Materials.”
116. *Army Research Laboratory*, Aberdeen, MD, February 2000: “The Influence of Crystal Structure on the Dynamic Behavior of Materials at High Temperatures.”
117. *Kyoto University*, Kyoto, Japan, February 1998: “Advanced Materials for Applications Involving Dynamic Loading.” Presented as State-of-the-Art Review in U.S.-Japan Workshop on Advanced Technologies for Earthquake Disaster Mitigation.
118. *National University of Singapore - IMRE*, Singapore, July 1997: “The Dynamic Behavior and Dynamic Failure of Metal-Matrix Composites.”
119. *Indian Institute of Science*, Bangalore, India, June 1997: “High-Rate Deformations, Deformation Twinning and Shear Localization in Alpha-Titanium.”
120. *California Institute of Technology*, Pasadena, CA, May 1997: “Grace Under Pressure: The Strength of Liquids.”
121. *University of Delaware*, Wilmington, DE, October 1996: “The Strength and Compressibility of Liquids.”
122. *Arizona State University*, Tempe, AZ, October 1996: “High-Rate Deformations and Twinning in Titanium.”
123. *Rutgers, the State University of New Jersey*, New Brunswick, NJ, October 1995: “The Unusual Behavior of Liquids Subjected to Very High Shear Rates and Very High Pressures.”
124. *Virginia Polytechnic Institute & State University*, Blacksburg, VA, September 1995: “The Dynamic Behavior and Dynamic Failure of Metal-Matrix Composites.”
125. *U.S. Armament Research, Development and Engineering Center*, Dover, NJ, September 1995: “The Dynamic Deformations of Tungsten-Based Composites: Experiments and Modeling.”
126. *State University of New York, Stony Brook*, NY, April 1995: “Dynamic Deformation and Failure in Metal-Matrix Composites.”
127. *University of Minnesota*, Minneapolis, MN, March 1995: “Dynamic Deformations and Dynamic Failures in a Metal-Matrix Composite.”
128. *University of Texas*, Arlington, TX, October 1994: “Dynamic Deformations and Shear Localization in a Tungsten-Based Composite.”
129. *Indian Institute of Science*, Bangalore, India, June 1994: “Dynamic Deformations and Failure Mechanisms in a Metal-Matrix Composite.”

130. *Drexel University*, Philadelphia, PA, April 1994: “Dynamic Deformations and Dynamic Failure Mechanisms in a Metal-Matrix Composite.”
131. *Cornell University*, Ithaca, NY, March 1994: “Dynamic Deformations and Shear Localization in a Tungsten-Based Composite.”
132. *California Institute of Technology*, Symposium on Dynamic Failure, Pasadena, CA, February 1994: “Dynamic Failure Mechanisms in a Metal-Matrix Composite.”
133. *Brown University*, Providence, Nov. 1993: “Dynamic Measurements in Compressible Solids and Liquids.”
134. *Virginia Polytechnic Institute & State University*, Blacksburg, VA, April 1993: “Microstructural Influences on the Deformation and Failure of Tungsten Heavy Alloys.”
135. *Ohio State University*, Columbus, February 1993: “The Rheology of Elastohydrodynamic Lubricants.”
136. *Gordon Conference on Tribology*, Plymouth, NH, June 1992: Invited Speaker: “Lubricant Rheology and the Localization of Deformations.”
137. *University of Pennsylvania*, Philadelphia, PA, April 1992: “The Effect of Porosity on the Plastic Deformation of Metals.”
138. *Army Research Laboratory*, Aberdeen, MD, Nov. 1992: “Micromechanisms of Deformation and Failure.”
139. *University of Illinois at Urbana-Champaign*, Urbana, IL, February 1991: “The Rheology of Elastohydrodynamic Lubricants.”
140. *University of California, San Diego*, CA, Dec. 1990: “The Rheology of Elastohydrodynamic Lubricants.”
141. *California Inst. Technology*, Pasadena, CA, Oct. 1990: “The Rheology of Elastohydrodynamic Lubricants.”

Invited and Contributed Conference Presentations:

1. 17th International Conference on Experimental Mechanics, Rhodes, Greece, July1-8, 2016. “Fibrillar network mechanics and brain injury.” With Amy Dagro, L. Rajbhandari and A. Venkatesan.
2. 17th International Conference on Experimental Mechanics, Rhodes, Greece, July1-8, 2016. “Dynamic Plasticity in the Mg Alloy AZ31B.” With M. Zhao, V. Kannan, N. Krywopusk, T.P. Weihs, L. Kecskes and C. Williams.
3. IUTAM Symposium on Integrated Computational Structure-Materials Modeling under Extreme Conditions, Baltimore, MD, June 2016. “The Secret Lives of Twins – Part II.”
4. Society for Experimental Mechanics Annual Conference, Orlando, FL, June 5-9, 2016. “The Effect of Strain rate on the Strength and Twinning in Single Crystal Magnesium.” With V. Kannan and K. Hazeli.
5. Society for Experimental Mechanics Annual Conference, Orlando, FL, June 5-9, 2016. “Ultra-High Strain Rate Pressure-shear Response of Rolled AZ31B Magnesium.” With M. Zhao, N. Krywopusk, T. Weihs, L. Kecskes and C. Williams.
6. Society for Experimental Mechanics Annual Conference, Orlando, FL, June 5-9, 2016. “Investigating Amorphization Using a Modified Multi-Axial Kolsky Bar.” With K. Leonard and M. Shaeffer.
7. Society for Experimental Mechanics Annual Conference, Orlando, FL, June 5-9, 2016. “Dynamic Plasticity and Failure in polycrystalline AZ31B: Micromechanics and Continuum Mechanics.” With V. Kannan, N. Krywopusk, K. Hazeli, and Tim Weihs.
8. Society for Experimental Mechanics Annual Conference, Orlando, FL, June 5-9, 2016. “Strain Evolution and Twinning Modes in Magnesium Single Crystals.” With K. Hazeli, V. Kannan, O. T. Kingstedt, and G. Ravichandran.

9. Society for Experimental Mechanics Annual Conference, Orlando, FL, June 5-9, 2016. “Deformation twinning in polycrystalline magnesium under dynamic compression.” With C. Hustedt, P. Lambert, V. Kannan, T.C. Hufnagel, N. Sinclair, D. Casem, J. Lloyd, R. Becker and T.C. Hufnagel.
10. Mach Conference, Annapolis, MD, April 6-8, 2016. The Role of Second Phase Particles on the Spall Behavior of ECAE 5083 Aluminum and ECAE AZ31B Magnesium.” With C. L. Williams, T. Sano, L. Kecskes and R. Becker.
11. Mach Conference, Annapolis, MD, April 6-8, 2016. “Effective compliance of a material with spatially distributed planar cracks under compressive loading.” With R.S. Ayyagari and N. Daphalapurkar.
12. Mach Conference, Annapolis, MD, April 6-8, 2016. “Pressure Shear Response of Rolled AZ31B Magnesium Alloy.” With M. Zhao.
13. Mach Conference, Annapolis, MD, April 6-8, 2016. “Computational Modeling and Validation of Brain Deformation in Human Volunteers with Relevance to Traumatic Brain Injury.” With S. Ganpule and N. Daphalapurkar.
14. Mach Conference, Annapolis, MD, April 6-8, 2016. “The Dynamics of Twinning in Single Crystal Magnesium at High Strain Rates.” With V. Kannan and K. Hazeli.
15. Mach Conference, Annapolis, MD, April 6-8, 2016. “Microstructure-Based Design of Advanced Ceramics for Light-Weight Protection Systems.” With J. D. Hogan, L. Farbaniec, D. Mallick, B. Schuster, T. Sano, and J.W. McCauley.
16. Mach Conference, Annapolis, MD, April 6-8, 2016. “On the Effect of Strain Rate on Twinning Modes Selection in Magnesium Single Crystal.” With K. Hazeli, O.T. Kingstedt, V. Kannan, G. Ravichandran.
17. Mach Conference, Annapolis, MD, April 6-8, 2016. “Constitutive Model for White Matter to Capture the Brain’s Shearing Response.” With F. Madouh.
18. Mach Conference, Annapolis, MD, April 6-8, 2016. “The Effect of Strain rate on the Strength and Anisotropy of AZ31B Magnesium Alloy: Continuum and Microstructural Effects.” With V. Kannan, N. Krywopusk, K. Hazeli, T. Weihs, and Dan Casem.
19. Mach Conference, Annapolis, MD, April 6-8, 2016. “Deformation twinning in polycrystalline magnesium under dynamic compression.” With C. Hustedt, P. Lambert, V. Kannan, T.C. Hufnagel, N. Sinclair, D. Casem, J. Lloyd, and R. Becker.
20. APS March Meeting, Baltimore, MD, March 2016. “Deformation twinning in a polycrystalline magnesium alloy during dynamic compression.” With C. Hustedt, P. Lambert, V. Kannan, T.C. Hufnagel, N. Sinclair, D. Casem, J. Lloyd and R. Becker.
21. Lunar and Planetary Science Conference, Woodlands, TX, March 21-25, 2016. “The Johns Hopkins University Applied Physics Laboratory’s Planetary Impact Laboratory.” With O.S. Barnouin, C.M. Ernst, A.M. Stickle and A. Lennon.
22. Lunar and Planetary Science Conference, Woodlands, TX, March 21-25, 2016. “Thermal Fatigue: Lengthscales, Timescales, and their implications on regolith size-frequency distribution.” With O.S. Barnouin, M. Delbo and C. El Mir.
23. Lunar and Planetary Science Conference, Woodlands, TX, March 21-25, 2016. “Impact Simulation Benchmarking for the Double Asteroid Redirect Test (DART).” With A. M. Stickle, O. S. Barnouin, M. Bruck Syal, A. Cheng, C. El Mir, C. M. Ernst, P. Michel, N. Oklay, M. Owen, M. Price, E. S. G. Rainey, S. R.

- Schwartz, J. Vincent, K. Wünnemann, and The AIDA Impact Simulation Working Group.
24. 41st International Conference and Expo on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 25-29, 2016. “Dynamic Compressive Response of Boron Carbide With Carbon Additive Prepared By Spark Plasma Sintering.” With A.K. Robinson, L. Farbaniec, K. Xie, T. Munhollon, M. Shaeffer and R. Haber.
 25. 41st International Conference and Expo on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 25-29, 2016. “Computational Implementation of Anisotropic damage failure in brittle materials.” With R.S. Ayyagari, D. Mallick, A.L. Tonge and N. Daphalapurkar.
 26. 41st International Conference and Expo on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 25-29, 2016. “Microstructure-Based Design of Advanced Ceramics for Light-Weight Protection Systems.” With J.D. Hogan, L. Farbaniec, J.W. McCauley, D. Mallick, B. Schuster and T. Sano.
 27. 41st International Conference and Expo on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 25-29, 2016. “Analysis of mechanical properties distribution in a hot-pressed boron carbide.” With L. Farbaniec, J.D. Hogan, and M. Shaeffer.
 28. MRS Meeting, Boston, MA, Nov. 29 - Dec. 4, 2015. “Microstructural Characterization of $\langle a \rangle$ -axis Mg Single Crystals Subjected to Normal Plate Impact.” With K. Xie, K. Hazeli, N. Dixit, and K. Hemker.
 29. MRS Meeting, Boston, MA, Nov. 29 - Dec. 4, 2015. “The Effect of Strain Rate on Twinning Modes in Magnesium Single Crystal.” With K. Hazeli and V. Kannan.
 30. International Mechanical Engineering Conference & Exposition, Houston, TX, Nov. 2015. “Twinning in single crystal magnesium under microsecond impact loading.” With Neha Dixit and Lukasz Farbaniec.
 31. Society of Engineering Science Annual Meeting, College Station, TX, Oct. 25-28, 2015. “Anisotropic damage in boron carbide: experiments and constitutive modeling.” With L. Farbaniec, R. S. Ayyagari, J. Hogan, M. Shaeffer, and N. Daphalapurkar.
 32. Society of Engineering Science Annual Meeting, College Station, TX, Oct. 25-28, 2015. “Anisotropic damage in boron carbide: experiments and constitutive modeling.” With L. Farbaniec, R. S. Ayyagari, J. Hogan, M. Shaeffer, and N. Daphalapurkar.
 33. 19th Biennial Conference of the APS Topical Group on Shock Compression of Condensed Matter, Tampa, FL, July 15-19, 2015. “Designing Materials for Dynamic Compressive Brittle Fragmentation.” With J.D. Hogan.
 34. 19th Biennial Conference of the APS Topical Group on Shock Compression of Condensed Matter, Tampa, FL, July 15-19, 2015. “Dynamic Plasticity in a Magnesium Alloy: Continuum and Microstructural Effects.” With V. Kannan, N. Krywopusk, L. Kecskes, and T. Weihs.
 35. Society for Experimental Mechanics 2015 Conference and Exposition, Costa Mesa, CA, June 2015. “The Hopkins Extreme Materials Institute.”
 36. Society for Experimental Mechanics 2015 Conference and Exposition, Costa Mesa, CA, June 2015. “Sub-Microsecond In-Situ X-ray Diffraction of Bulk Polycrystalline Metals under Dynamic Compression.” With C. Hustedt, P. Lambert, E. Huskins, D. Casem, V. Kannan, S. Gruner, M. Tate, T.C. Hufnagel, H. Philip, A. Woll, P. Purohit, J.T. Weiss, M. Zhao and A. Ananiadis.
 37. Society for Experimental Mechanics 2015 Conference and Exposition, Costa Mesa, CA, June 2015. “Micromechanical characterization and relevance of inclusions in dynamic response of boron carbide.” With L. Farbaniec, J. D. Hogan, and M. Shaeffer.
 38. Society for Experimental Mechanics 2015 Conference and Exposition, Costa Mesa, CA, June 2015.

- “Quantifying Astrocyte Reactivity Through Extracellular Matrix Stiffness Measurements.” With A. Dagro, L. Rajbhandari, S. Kurapati and A. Venkatesan.
39. Society for Experimental Mechanics 2015 Conference and Exposition, Costa Mesa, CA, June 2015. “On the Behavior of Fragmented Brittle Materials.” With J. D. Hogan, A.K. Robinson, P. Tilson, and E. Krimsky.
40. 13th Hypervelocity Impact Symposium, Boulder, Colorado, April 27 – May 1, 2015. “Dynamic Brittle Fragmentation: Probing The Bi-Products of Hypervelocity Impacts In Space.” With J.D. Hogan, C. El Mir, and J. Plescia.
41. 13th Hypervelocity Impact Symposium, Boulder, Colorado, April 27 – May 1, 2015. “A Quantitative Approach to Comparing High Velocity Impact Experiments and Simulations using XCT Data.” With A.L. Tonge, B. Leavy, J. LaSalvia, B. Schuster and R. Brannon.
42. Mach Conference, Annapolis, MD, April 8-10, 2015. “Dynamic Response of AZ31B Magnesium under Pressure-Shear.” With M. Zhao and R.S. Ayyagari.
43. Mach Conference, Annapolis, MD, April 8-10, 2015. “Dynamic Plasticity and Failure in an ECAE AZ31B Mg Alloy.” With V. Kannan, N. Krywopusk, D. Casem and T. Weihs.
44. Mach Conference, Annapolis, MD, April 8-10, 2015. “A Generalized Anisotropic Damage Model for Dynamic Brittle Failure in Ceramics.” With R.S. Ayyagari, N. Daphalapurkar and D. Mallick.
45. Mach Conference, Annapolis, MD, April 8-10, 2015. “Dynamic Failure and Microstructure-related Damage in Boron Carbide.” With L. Farbaniec, J.D. Hogan and M. Shaeffer.
46. Mach Conference, Annapolis, MD, April 8-10, 2015. “Brittle Beam Fracture and the Transient Flexural Waves Released from the Fracture Point.” With F. Zhou.
47. Mach Conference, Annapolis, MD, April 8-10, 2015. “Influence of Pressure and Shear on Amorphization in Boron Carbide.” With K. Leonard and J.D. Hogan.
48. Mach Conference, Annapolis, MD, April 8-10, 2015. “On Dynamic Failure and Microstructure-related Damage Evolution in Boron Carbide.” With L. Farbaniec, J. D. Hogan and M. Shaeffer.
49. 2015 Lunar and Planetary Science Conference, Woodlands, TX, March 15-20, 2015. “Regolith Formation On Airless Bodies.” With K. Hazeli, J. Wilkerson, C. El Mir, and M. Delbo.
50. 2015 Lunar and Planetary Science Conference, Woodlands, TX, March 15-20, 2015. “On The Role Of Defects In The Dynamic Failure Of An Ordinary Chondrite.” With J.D. Hogan, J. Kimberley, K. Hazeli and J. Plescia.
51. 2015 Lunar and Planetary Science Conference, Woodlands, TX, March 15-20, 2015. “Thermally-Driven Regolith Evolution On Small Asteroids.” With M. Delbo, G. Libourel, J. W. Wilkerson, N. Murdoch, P. Michel, C. Ganino, C. Verati and S. Marchi.
52. National Capital Area Traumatic Brain Injury Research Symposium, Washington, DC, March 9-10, 2015. “Computational Modeling and Validation of Brain Deformation in Human Volunteers with Relevance to Traumatic Brain Injury.” With S. Ganpule and N. Daphalapurkar.
53. 40th International Conference and Expo on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 25-29, 2015. “Anisotropic Damage Modeling of Boron Carbide with an Informed Microstructure.” With Mallick, D., Hogan, J.D, Farbaniec, L., Shaeffer, M., Ayyagari, R.S., and Daphalapurkar, N.*
54. 40th International Conference and Expo on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 25-29, 2015. “Micromechanical characterization and relevance of inclusions in dynamic response of commercially hot-pressed boron carbide.” With L. Farbaniec*, J. D. Hogan, and M. Shaeffer.

55. 40th International Conference and Expo on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 25-29, 2015. “Dynamic Brittle Fragmentation of Advanced Ceramics.” With J. D. Hogan and N. Daphalapurkar.
56. AstroRecon2015: Conference on Spacecraft Reconnaissance of Asteroid and Comet Interiors, Tempe, AZ, Jan. 8-10, 2015. “Strength of Meteorites Samples Subjected to Various Loading States. With J. Kimberley* and J. D. Hogan.
57. American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 15-19, 2014. “A new mechanism for the formation of regolith on asteroids.” With M. Delbo, G. Libourel, J. Wilkerson, N. Murdoch, P. Michel, C. Ganino, C. Verati and S. Marchi.
58. Materials Research Society Fall Meeting and Exhibit, Boston, MA, Nov. 30 – Dec. 5, 2014. “Sub-Microsecond In-Situ X-ray Diffraction of Bulk Polycrystalline Metals under Dynamic Compression. With C. Hustedt et al.
59. The Division on Planetary Sciences Annual Meeting, Tucson, AZ, Nov. 9-14, 2014. “Thermal Fatigue on Asteroids.” With M. Delbo, J. Wilkerson, P. Michel, G. Libourel, N. Murdoch, S. Marchi, C. Ganino, V. Chrystele.
60. Materials Science and Technology, Pittsburgh, PA, Oct. 12-16, 2014. “Microstructure-Based Modelling of the Failure and Strength of Advanced Ceramics.” With J.D. Hogan, D. Mallick and R.S. Ayyagari.
61. Society of Engineering Science Annual Technical Meeting, West Lafayette, IN, Oct. 1-3, 2014. “A Microstructurally Informed Dynamic Ductile Failure Model.” With J. Wilkerson.
62. Society of Engineering Science Annual Technical Meeting, West Lafayette, IN, Oct. 1-3, 2014. “Dynamic mechanical response and microstructural effects in commercially hot-pressed boron carbide under different loading rates and stress states.” With L. Farbaniec and M. Shaeffer.
63. Society of Engineering Science Annual Technical Meeting, West Lafayette, IN, Oct. 1-3, 2014. “Dynamic response of ECAE-AZ31 magnesium under pressure-shear.” With R.S. Ayyagari.
64. Society of Engineering Science Annual Technical Meeting, West Lafayette, IN, Oct. 1-3, 2014. “Kinetics of a Fast Moving Twinning Dislocation.” With N.P. Daphalapurkar, J.W. Wilkerson and T.W. Wright.
65. Society of Engineering Science Annual Technical Meeting, West Lafayette, IN, Oct. 1-3, 2014. “Microstructural evolution in pure magnesium at high strain rates.” With N. Dixit, K. Xie, and K. Hemker.
66. Society of Engineering Science Annual Technical Meeting, West Lafayette, IN, Oct. 1-3, 2014. “TEM Observations of Cytoskeletal Evolution in CNS Axons.” With A. Fournier.
67. Society of Engineering Science Annual Technical Meeting, West Lafayette, IN, Oct. 1-3, 2014. “Twinning and the Mechanical Behavior of Mg alloys at Very High Rates. With V. Kannan.
68. European Planetary Science Congress, Cascais, Portugal, Sept. 7-12, 2014. “Thermal cracking as a source of regolith on asteroids.” With M. Delbo, G. Libourel, J. Wilkerson, N. Murdoch, P. Michel, C. Ganino, C. Verati and S. Marchi.
69. NASA’s Exploration Science Forum, Moffett Field, CA, Jul. 21-23, 2014. “Origin and Evolution of Regolith on Airless Bodies: The Role of Thermal Fatigue.” With C. El Mir, J.B. Plescia and K. Hazeli.
70. 7th World Congress of Biomechanics, Boston, MA, Jul. 6-11, 2014. “Micro-Mechanics of Neuronal Compression: It’s About Time.” With A. Fournier, J.D. Hogan, L. Rajbhandari, S. Shrestha and A. Venkatesan.
71. 7th World Congress of Biomechanics, Boston, MA, Jul. 6-11, 2014. “Modeling and validation of shearing deformation in human brain subjected to mild accelerations.” With S. Ganpule, N.P. Daphalapurkar, A.K. Knutsen and P.V. Bayly.

72. Asteroids, Comets & Meteors, Helsinki, Finland, Jun. 30 – Jul. 4, 2014. “Effects of Solar Heating on Asteroids.” With M. Delbo, G. Libourel, J. Wilkerson, N. Murdoch, P. Michel, C. Ganino, C. Verati and S. Marchi.
73. Asteroids, Comets & Meteors, Helsinki, Finland, Jun. 30 – Jul. 4, 2014. “Regolith production on asteroid surfaces via thermal fatigue fragmentation. With N. Murdoch, M. Delbo, G. Libourel, J. Wilkerson, P. Michel, C. Ganino, C. Verati and S. Marchi.
74. Asteroids, Comets & Meteors, Helsinki, Finland, Jun. 30 – Jul. 4, 2014. “The Tectonic Evolution of 433 Eros.” With O.S. Barnouin, A.L. Tonge, D.L. Buczkowski and L.M. Prockter.
75. 17th U.S. National Congress on Theoretical and Applied Mechanics, East Lansing, MI, Jun. 15-20, 2014. “Shear Wave Propagation in Soft Materials with Application to Modeling Traumatic Brain Injury.” With S. Ganpule and N. Daphalapurkar.
76. SEM Annual Conference and Exposition on Experimental and Applied Mechanics, Greenville, SC, Jun. 2-4, 2014. “The Effect of Microstructure on the Dynamic Failure and Fragmentation of Boron Carbide.” With J.D. Hogan.
77. SEM Annual Conference and Exposition on Experimental and Applied Mechanics, Greenville, SC, Jun. 2-4, 2014. “Microstructural evolution in pure magnesium at high strain rates.” With N. Dixit, K. Xie and K. Hemker.
78. 4th Annual Traumatic Brain Injury Conference, Washington, D.C., April 16-17, 2014. “Biomechanics-based Computational Models of the Human Brain for Diagnosis of TBI.” With N. Daphalapurkar and S. Ganpule.
79. Mach Conference, Annapolis, MD, April 9-11, 2014. “Dynamic Behavior of Saturn’s Particles: Recreating Ice Collisions to Understand the Formation of Saturn’s Rings.” With D. Kats, A. Easterling and J. D. Hogan
80. Mach Conference, Annapolis, MD, April 9-11, 2014. “Dynamic Failure of Armor Ceramics: Bridging Experimental and Modeling Efforts.” With D. Mallick and J.D. Hogan.
81. Mach Conference, Annapolis, MD, April 9-11, 2014. “Insights from a new micromechanics based dynamic damage model for boron carbide.” With A.L. Tonge.
82. Mach Conference, Annapolis, MD, April 9-11, 2014. “Micromechanical characterization of commercially hot-pressed boron carbide by combining nanoindentation and SEM/EDS analysis. With L. Farbaneic and J. D. Hogan.
83. Mach Conference, Annapolis, MD, April 9-11, 2014. “Stability of Ideal FCC Twin Boundaries.” With T.W. Wright and N. Daphalapurkar.
84. Mach Conference, Annapolis, MD, April 9-11, 2014. “The Effect of Microstructure on Advanced Ceramic Compressive Fragmentation.” With J.D. Hogan and N. Daphalapurkar.
85. Mach Conference, Annapolis, MD, April 9-11, 2014. “The Dynamic Failure of Ice and the Formation of Saturn’s Rings.” With D. Kats, A. Easterling and J.D. Hogan.
86. Mach Conference, Annapolis, MD, April 9-11, 2014. “The Dynamic Strength of SiC: Dynamic Mechanisms and Microstructure.” With M. Shaeffer, E. Prasad, J. Kimberley, C.Q. Chen, J.D. Hogan, V. Delucca, N. Daphalapurkar, and R. Haber.
87. Mach Conference, Annapolis, MD, April 9-11, 2014. “The Mechanical Behavior of Magnesium Alloys at Very High Strain Rates.” With V. Kannan.
88. 45th Lunar and Planetary Science Conference, The Woodlands, TX, March 17-21, 2014. “Failure and Fragmentation of Meteorites and Basalt: Understanding Lunar Regolith Generation.” With J.D. Hogan and J.

- Plescia.
89. 45th Lunar and Planetary Science Conference, The Woodlands, TX, March 17-21, 2014. “Large Impacts on Airless Bodies: The Himeros event on Eros.” With A.L. Tonge, O.S and Barnouin.
 90. 45th Lunar and Planetary Science Conference, The Woodlands, TX, March 17-21, 2014. “The Dynamic Strength of Basalt Under General Stress States: Experiments for Impact Model Development and Validation.” With A.M. Stickle and J. Kimberley.
 91. The Minerals, Metals & Materials Society Annual Meeting & Exhibition, San Diego, CA, Feb. 16-20, 2014. “Dislocation Structure of <0001> Mg Single Crystal under Quasi-static and Dynamic Loading Compressions.” With K. Xie, N. Dixit, S. Lockyer-Bratton and K. Hemker.
 92. The Minerals, Metals & Materials Society Annual Meeting & Exhibition, San Diego, CA, Feb. 16-20, 2014. “Dynamic Behavior of a Rare Earth Containing Mg Alloy, WE43B-T5, Plate with Comparison to Conventional Alloy, AM30-F. With S. Agnew, W. Wittington, A. Oppedal, H. El Kadiri, M. Shaeffer, J. Bhattacharyya, R. DeLorme and Bruce Davis.
 93. The Minerals, Metals & Materials Society Annual Meeting & Exhibition, San Diego, CA, Feb. 16-20, 2014. “The Good, The Bad and The Ugly Defects – Controlling the Dynamic Failure Strength of Brittle Materials.” With N. Daphalapurkar.
 94. 39th International Conference and Expo on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 25-30, 2014. “Towards: Using Micromechanics-based Models to Inform the Design of Advanced Ceramic Materials.” With A. Tonge.
 95. MRS Symposium ZZ: Nanostructured Materials in Extreme Environments, Boston, MA, Dec. 1-6, 2013. “Deformation and failure of nanostructured metals under extreme conditions.”
 96. Monie Ferst Symposium in honor of Rod Clifton, Atlanta, GA, October 25, 2013. “Neuromechanics: in situ observations of the evolution of the neuronal cytoskeleton under load.” With A. Fournier.
 97. Performance of Materials and Structures under Extreme Loading Conditions, a special symposium honoring Prof. Arun Shukla, Kingston, RI, Oct. 12-13, 2013. “Fracture and Porosity of Asteroids.” With A.L. Tonge and O.S. Barnouin.
 98. Microscopy and Microanalysis 2013, Indianapolis, IN, Aug. 4-8, 2013. “Mechanism of deformation twinning in tantalum driven by extremely dynamic shear-compression at low temperature.” With C.Q. Chen, J.N. Florando, M. Kumar, and K.J. Hemker.
 99. Gordon Research Conference, Biddeford, ME, July 28-Aug. 2, 2013. “Observations of Dislocation Structures in Pure Magnesium after Dynamic Compressive Loading.” With K.Y. Xie, N. Dixit, and K. Hemker.
 100. Society of Engineering Science 50th Annual Technical Meeting, Providence, RI, July 28-31, 2013. “A quantitative analysis of strengthening mechanisms and rate-dependence in a high strength aluminum alloy.” With B. Cao and M. Shaeffer.
 101. Society of Engineering Science 50th Annual Technical Meeting, Providence, RI, July 28-31, 2013. “Flaw distributions, subscale crack interactions, and dynamic failure of ceramics.” With A.L. Tonge.
 102. Society of Engineering Science 50th Annual Technical Meeting, Providence, RI, July 28-31, 2013. “Kinetics of a Fast Moving Twin Boundary.” With N. Dixit and N.P. Daphalapurkar.
 103. Society of Engineering Science 50th Annual Technical Meeting, Providence, RI, July 28-31, 2013. “Micro-Mechanics of Neuronal Compression II: The Cytoskeleton Strikes Back.” With A. Fournier.

104. Society of Engineering Science 50th Annual Technical Meeting, Providence, RI, July 28-31, 2013. “The Consequences of Impact on Asteroids.”
105. Society of Engineering Science 50th Annual Technical Meeting, Providence, RI, July 28-31, 2013. “The Dynamics of Brain Injury.”
106. 2013 Joint APS-SCCM/AIRAPT Conference, Seattle, WA, July 7-12, 2013. “Deformation Response of Rocky Materials for a Range of Stress States and Strain Rates.” With A.M. Stickle.
107. 2013 Joint APS-SCCM/AIRAPT Conference, Seattle, WA, July 7-12, 2013. “Effect of pre-strain on the twinning behavior in Tantalum.” With J.N. Florando, N.R. Barton, B.S. El-Dasher, J.M. McNaney, M.M. LeBlanc, M. Kumar, C.Q. Chen, and K.J. Hemker.
108. 2013 Joint APS-SCCM/AIRAPT Conference, Seattle, WA, July 7-12, 2013. “High rate deformation and failure mechanisms in brittle materials.”
109. ASME 2013 Summer Bioengineering Conference, Sunriver, OR, June 26-29, 2013. “Computational Model of the Eye for Primary Blast Injury.” With T.D. Nguyen.
110. ASME 2013 Summer Bioengineering Conference, Sunriver, OR, June 26-29, 2013. “Micro-Mechanics of Neuronal Compression II: The Cytoskeleton Strikes Back.” With A. Fournier, B. Chennuri, L. Rajbhandari, S. Shrestha, A. Shah, and A. Venkatesan.
111. Catastrophic Disruption 8, Hawaii, June 24-27, 2013. “Mechanisms and Models of Fragmentation.”
112. IUTAM Symposium on Materials and Interfaces Under High Strain Rate and Large Deformation, Metz, France, June 17-21, 2013. “The Secret Lives of Twins.” With N. Dixit and N. Daphalapurkar.
113. Society of Experimental Mechanics Annual Conference and Exposition on Experimental and Applied Mechanics, Lombard, IL, June 3-6, 2013. “Dynamics of Twin Evolution in Pure Magnesium.” With N. Dixit.
114. Society of Experimental Mechanics Annual Conference and Exposition on Experimental and Applied Mechanics, Lombard, IL, June 3-6, 2013. “In-situ observation of twin boundary migration in polycrystalline magnesium.” With K. Eswar Prasad.
115. Society of Experimental Mechanics Annual Conference and Exposition on Experimental and Applied Mechanics, Lombard, IL, June 3-6, 2013. “Micro-Mechanics of Neuronal Compression.” With A. Fournier.
116. 10th World Congress of Society for Brain Mapping and Therapeutics, Baltimore, MD, May 12-15, 2013. “A Multiscale Computational Approach to Estimating Axonal Damage under Inertial Loading of the Head.” Invited.
117. Mach Conference, Baltimore, MD, April 10-12, 2013. “Anisotropy in hardness in Hexagonal SiC single crystals.” With K.E. Prasad. (Poster)
118. Mach Conference, Baltimore, MD, April 10-12, 2013. “A Scaling Law for the Dynamic Compressive Strength of Brittle Solids.” With J. Kimberly and N. Daphalapurkar
119. Mach Conference, Baltimore, MD, April 10-12, 2013. “Dynamic Experiments for Dummies (with Apologies).”
120. Mach Conference, Baltimore, MD, April 10-12, 2013. “Elastic Stability of a Homogeneous Twin Boundary in Nanoscale fcc Materials.” With T.W. Wright and N. Daphalapurkar.
121. Mach Conference, Baltimore, MD, April 10-12, 2013. “High strain rate compression of brittle materials: boron carbide and basalt.” With A.M. Stickle.
122. Mach Conference, Baltimore, MD, April 10-12, 2013. “Inelastic Polarization Behavior of Monocrystalline Quartz Orientations.” With L. Lamberson and J. McCauley.

123. Mach Conference, Baltimore, MD, April 10-12, 2013. "Physics-based scale bridging in armor ceramics." With A.L. Tonge.
124. Mach Conference, Baltimore, MD, April 10-12, 2013. "Surviving impact: Novel approach to design armor ceramics." With K. Eswara Prasad, M. Shaffer, N. Daphalapurkar, and K.J. Hemker.
125. American Physics Society, Baltimore, MD, March 18-22, 2013. "Modeling brittle material failure under high velocity impact conditions: From experiments to simulations." With A.L. Tonge.
126. Lunar and Planetary Science Conference, The Woodlands, TX, March 18-22, 2013. "Dynamic Strength Experiments on Basalt with Applications to Cratering on Mercury." With A.M. Stickle and J. Kimberley.
127. Lunar and Planetary Science Conference, The Woodlands, TX, March 18-22, 2013. "Impact Damage on Eros." With A.L. Tonge and O.S. Barnouin.
128. Lunar and Planetary Science Conference, The Woodlands, TX, March 18-22, 2013. "Dynamic Strength Experiments on Basalt with Applications to Cratering on Mercury." With A.M. Stickle and J. Kimberley.
129. International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 28-Feb. 1, 2013. "Armor Ceramics in Extreme Dynamic Environments." Invited.
130. International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 28-Feb. 1, 2013. "3D Mechanism-Based Modeling for Brittle Material Failure under Dynamic Multiaxial Loading." With Guangli Hu.
131. International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 28-Feb. 1, 2013. "Simulations of Edge-on Impact (EOI) using a micromechanics damage model." With A. Tonge.
132. International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 28-Feb. 1, 2013. "Materials for Extreme Dynamic Environments." With John Beatty.
133. International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 28-Feb. 1, 2013. "Correlating flaw size distributions and dynamic failure strengths of brittle materials from finite element simulations of micro-cracking." With N. Daphalapurkar.
134. Fall Meeting of the Materials Research Society, Boston, MA, Nov. 25-30, 2012. "*In-situ* characterization of twinning in pure Magnesium." With K. Eswar Prasad.
135. Fall Meeting of the Materials Research Society, Boston, MA, Nov. 25-30, 2012. "Microstructure evolution and mechanical response of Tantalum under compressive and shear dominant deformation at high strain rates and low temperatures." With C.Q. Chen,* K.J. Hemker, M. Kumar & J.N. Florando.
136. Fall Meeting of the Materials Research Society, Boston, MA, Nov. 25-30, 2012. "*In-situ* characterization of twinning in pure Magnesium." With K. Eswar Prasad.
137. Materials in Extreme Dynamic Environments Fall Meeting, Baltimore, MD, Oct 17-19, 2012. "Physics-based Dynamic Damage Models For Armor Ceramics."
138. Materials in Extreme Dynamic Environments Fall Meeting, Baltimore, MD, Oct 17-19, 2012. "TEM Characterization Of Dislocation Structure in Magnesium." With K. Hemker
139. Materials in Extreme Dynamic Environments Fall Meeting, Baltimore, MD, Oct 17-19, 2012. "High Strain Rate Characterization Of Magnesium and Its Alloys."
140. Materials in Extreme Dynamic Environments Fall Meeting, Baltimore, MD, Oct 17-19, 2012. "In Situ Visualization In Kolsky Bar Experiments."
141. Materials in Extreme Dynamic Environments Fall Meeting, Baltimore, MD, Oct 17-19, 2012. "TEM Characterization Of Boron Carbide." With K. Hemker
142. Society of Engineering Science, Atlanta, GA, Oct. 10-12, 2012. "A Micromechanics Based Damage Model Applied to Asteroid Impacts." With A.L. Tonge.*
143. Society of Engineering Science, Atlanta, GA, Oct. 10-12, 2012. "Effect of Void Growth on Shear Band Spacing in Porous Metals subjected to large strain rate loading." With D.V. Kubair* & P.K. Swaminathan.

144. Society of Engineering Science, Atlanta, GA, Oct. 10-12, 2012. “Twin Boundary Motion in Pure Magnesium.” With N. Dixit.*
145. Society of Engineering Science, Atlanta, GA, Oct. 10-12, 2012. “Micromechanics of Neuronal Compression.” With A. Fournier.*
146. Society for Experimental Mechanics, Costa Mesa, CA, Jun 11-14, 2012. “Early stage damage propagation in hypervelocity impacts on brittle materials.” With J. Kimberley.*
147. Society for Experimental Mechanics, Costa Mesa, CA, Jun 11-14, 2012. “Modeling the effect of particle size distribution on the high rate response of particle reinforced metal matrix composites.” With B. McWilliams* & C. Yen.
148. Society for Experimental Mechanics, Costa Mesa, CA, Jun 11-14, 2012. “Deformation twinning in pure magnesium at high strain rates.” With N. Dixit.*
149. Society for Experimental Mechanics, Costa Mesa, CA, Jun 11-14, 2012. “Damage and the Electromechanical Behavior of Piezoelectric Ceramics.” With L. Lamberson* & G. Gazonas.
150. ASME 2012 Summer Bioengineering Conference, Puerto Rico, Jun. 20-23, 2012. “A Finite Element Model For Estimating Axonal Damage In Traumatic Brain Injury.” With R.M. Wright.*
151. ASME 2012 Summer Bioengineering Conference, Puerto Rico, Jun. 20-23, 2012. “Thresholds For Embryonic CNS Axon Integrity, Degeneration, And Regrowth Using A Focal Compression Platform.” With A. Fournier,* & S. Hosmane.
152. TMS Annual Meeting, Orlando, FL, Mar. 11-15, 2012. “A Model for Diffuse Axonal Injury.”
153. TMS Annual Meeting, Orlando, FL, Mar. 11-15, 2012. “Nucleation versus propagation of deformation twins in tantalum driven by high shear strain rate at low temperature.” With C.Q. Chen,* K.J. Hemker, M. Kumar & J.N. Florando.
154. TMS Annual Meeting, Orlando, FL, Mar. 11-15, 2012. “Studying the effects of twinning in Ta.” With J. N. Florando*, N.R. Barton, M. Kumar, C.Q. Chen and K.J. Hemker.
155. TMS Annual Meeting, Orlando, FL, Mar. 11-15, 2012. “Effect of particle size distribution on the deformation response of particle reinforced metal matrix composites.” With B. McWilliams* & C. Yen.
156. Lunar & Planetary Science Conference, The Woodlands, TX, March 19-23, 2012. “Real-time observation of early stage damage during hypervelocity impacts.” With J. Kimberley.* Poster Presentation.
157. Twelfth Hypervelocity Impact Symposium, Baltimore, MD, Sep. 16-20, 2012. “A Consistent Scaling Framework for Simulating High Rate Brittle Failure Problems.” With A.L. Tonge* & J. Kimberley.
158. Twelfth Hypervelocity Impact Symposium, Baltimore, MD, Sep. 16-20, 2012. “Visualization Of Early Stage Damage Propagation During Hypervelocity Impacts On Brittle Materials.” With J. Kimberley.
159. International Workshop on Computational Mechanics and Materials, Baltimore, MD, Sep. 24-26, 2012: “Development and Implementation of a Micromechanics based damage model for Simulating Brittle material failure across many scales.” With A.L. Tonge.*
160. International Workshop on Computational Mechanics and Materials, Baltimore, MD, Sep. 24-26, 2012: “A 3D Mechanism-Based Model for Brittle Material Failure under Dynamic Multiaxial Loading.” With G. Hu.
161. ASME International Mechanical Engineering Conference & Exposition, Houston, TX, Nov. 9-15, 2012. “3D Mechanism-Based Modeling of the Failure of Brittle Materials under Dynamic Multiaxial Loading.” With G. Hu.
162. ASME International Mechanical Engineering Conference & Exposition, Houston, TX, Nov. 9-15, 2012. “Modeling Specimen-size Effect on the Variability in Dynamic Failure Strength of Brittle Materials.” With N.P. Daphalapurkar.*
163. ASME International Mechanical Engineering Conference & Exposition, Houston, TX, Nov. 9-15, 2012. “Kinetics of Moving Twin Boundaries from Molecular Dynamics Simulations.” With N.P. Daphalapurkar.*
164. ASME International Mechanical Engineering Conference & Exposition, Houston, TX, Nov. 9-15, 2012. “The Dynamic Failure of Geophysical Materials.”
165. Annual Meeting of the American Physical Society, Boston, MA, Feb. 27-Mar. 2, 2012. “The role of shock

- induced defect structure in spall failure.” With J. Wilkerson.*
166. International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 22-27, 2012. “From Mechanisms to Materials: Armor Ceramics.” Invited.
167. International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 22-27, 2012. “Specimen Size Effects on the Dynamic Failure Strength of Brittle Materials.” With N.P. Daphalapurkar* and G. Hu.
168. International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 22-27, 2012. “Deformation Mechanisms in Aluminum Nitride Under Shock Loading.” With G. Hu,* C. Williams, C.Q. Chen, & J.W. McCauley.
169. International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 22-27, 2012. “Mechanism-Based Modeling on the Failure of Brittle Materials under Dynamic Multiaxial Loading.” With G. Hu.*
170. Shock Compression of Condensed Matter, Chicago, IL, June 26- Jul. 1, 2011. “Effect of strain rate and dislocation density on the twinning behavior in Tantalum.” With J. Florando,* M. LeBlanc, J. McNaney, N. Barton, D. Swift, B. Hammel, M. Kumar, C.Q. Chen & K.J. Hemker.
171. Shock Compression of Condensed Matter, Chicago, IL, June 26- Jul. 1, 2011. “Deformation Mechanisms In Aluminum Nitride Under Shock Loading.” Poster. With G. Hu*, C.Q. Chen, C. Williams & J.W. McCauley.
172. ASME 2011 Summer Bioengineering Conference, Farmington, PA, June 22-25, 2011, “Modeling study for the design of an innovative composite membrane inflation test.” With K.A. Ziegler,* R. Yatnalkar & T.D. Nguyen.
173. Society for Experimental Mechanics, Uncasville, CT, June 13-16, 2011, “Understanding Damage Growth Under Global Compression.” With A.L. Tonge and J. Kimberley.
174. Society for Experimental Mechanics, Uncasville, CT, June 13-16, 2011, “Dynamic compressive strength of transparent polycrystalline spinel.” With J. Kimberley,* J.W. McCauley & P. Patel.
175. Society for Experimental Mechanics, Uncasville, CT, June 13-16, 2011, “Electrical-Mechanical Response of Dynamically Loaded Piezoelectric Materials.” With L. Lamberson.*
176. Society for Experimental Mechanics, Uncasville, CT, June 13-16, 2011, “Dynamic Response of Aluminum Nitride under Very High Strain Rate and Pressure.” With G. Hu,* C. Williams, C.Q. Chen & J.W. McCauley.
177. Society of Engineering Science, Northwestern University, Chicago, IL, October 12-14, 2011, “Dynamics of Twin Boundary Motion in Face-centered Cubic Metals.” With T.W. Wright & N.P. Daphalapurkar*.
178. Society of Engineering Science, Northwestern University, Chicago, IL, October 12-14, 2011, “Axon Injury Micro-Compression Platform.” With S. Hosmane, A. Fournier,* R.M. Wright, L. Rajbhandari, A. Venkatesan, and N. Thakor.
179. US National Congress on Computational Mechanics, Minneapolis, MN, July 25-29, 2011, “Implementing a Micromechanics Based Continuum Damage Model for Simulating Brittle Material Failure under Compressive Loading.” With A.L. Tonge & N.P. Daphalapurkar*.
180. TMS Annual Meeting and Exposition, San Diego, CA, Feb. 27- March 3, 2011, “Effect of Initial Dislocation Density on Microcompression Experiments of HCP Single-Crystal Magnesium.” With Cynthia M. Byer*.
181. TMS Annual Meeting and Exposition, San Diego, CA, Feb. 27- March 3, 2011, “Lighter, Stronger, Faster: Materials for an Insecure Future.” N.P. Daphalapurkar*. Invited.
182. TMS Annual Meeting and Exposition, San Diego, CA, Feb. 27- March 3, 2011, “Partial Dislocation Nucleation and Twinning in Aluminum.” With N.P. Daphalapurkar*.
183. TMS Annual Meeting and Exposition, San Diego, CA, Feb. 27- March 3, 2011, “Thermal Stability of Commercially Pure Ultra-fine Grained Al at High Strain Rates.” With Emily Huskins*.
184. TMS Annual Meeting and Exposition, San Diego, CA, Feb. 27- March 3, 2011, “Deformation twins in tantalum deformed under a wide range of loading conditions and environment temperatures by using TEM and HREM.” With C.Q. Chen*, K.J. Hemker, M. Kumar & J. Florando.
185. Lunar & Planetary Science Conference, The Woodlands, TX, March 7-11, 2011. “A size dependent scaling law based on the rate dependent strength of rocky bodies.” With J. Kimberley* & Olivier S. Barnouin. Poster

- Presentation.
186. International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL. Jan. 24-28, 2011. "Length Scale Effects on the Dynamic Failure Strengths of Brittle Materials." With N.P. Daphalapurkar and L. Graham-Brady.
 187. International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL. Jan. 24-28, 2011. "The strength and failure of ceramics at very high strain rates." With Guangli Hu*, Jamie Kimberley & J. W. McCauley.
 188. International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL. Jan. 24-28, 2011. "A Scaled Model Describing the Rate-Dependent Compressive Strength of Brittle Materials." With Jamie Kimberley & Guangli Hu.
 189. MS&T 2010, Houston, TX, October 17-21, 2010, "The High-Strain-Rate Behavior of Heterogeneous Materials: Experiments and Models." Invited.
 190. MS&T 2010, Houston, TX, October 17-21, 2010, "Partial Dislocations and Deformation Twinning in Aluminum." With N. Daphalapurkar* and B. Cao.
 191. 16th US National Congress on Theoretical and Applied Mechanics (USNCTAM) at Penn State University, June 27 – July 2, 2010, "Stability Map for Nanostructured and Amorphous Materials." With S.P. Joshi.
 192. 16th US National Congress on Theoretical and Applied Mechanics (USNCTAM) at Penn State University, June 27 – July 2, 2010, "Computational Modeling Of The Variability In Defect Dominated Dynamic Failure Strengths In Brittle Materials." With N. Daphalapurkar, Jean-Francois Molinari and Lori Graham-Brady.
 193. 16th US National Congress on Theoretical and Applied Mechanics (USNCTAM) at Penn State University, June 27 – July 2, 2010, "Crack Initiation and Propagation in Single Crystal Quartz." With Andrew Tonge and J. Kimberley.
 194. 16th US National Congress on Theoretical and Applied Mechanics (USNCTAM) at Penn State University, June 27 – July 2, 2010, "Effect of Anisotropy in a Model of Traumatic Brain Injury." With Rika Wright.*
 195. 47th Sagamore Army Materials Conference, St. Michaels, MD June 14-19, 2010. "The High-Strain-Rate Behavior and Dynamic Failure of Lightweight Metals."
 196. 47th Sagamore Army Materials Conference, St. Michaels, MD June 14-19, 2010, "Partial Dislocations and Twinning in Aluminum." With N.P. Daphalapurkar and B. Cao.
 197. Army Aluminum Armor Workshop, Baltimore, MD, May 2010: "The Strengthening of Aluminum: Strain Rate and Grain Size Effects." Invited.
 198. ICCES - International Conference on Computational and Experimental Engineering and Sciences, Las Vegas, NV, Mar. 28 – Apr. 4, 2010, "The Dynamics of Nanomaterials." Invited Keynote.
 199. 41st LPSC, The Woodlands, TX, March 1-5, 2010, "A normalized model describing the compressive strength of geologic materials." With J. Kimberley.
 200. 41st LPSC, The Woodlands, TX, March 1-5, 2010, "Dynamic strength measurements of L5 chondrite macalpine hills 88118." With J. Kimberley, Olivier S. Barnouin-Jha, P.K. Swaminathan and C.M. Ernst.
 201. TMS Annual Meeting and Exposition, Seattle, WA, Feb. 14-18, 2010, "Size dependent ductile failure analysis of particle-reinforced composites via finite element modeling of dislocation punched zone." With Y. S. Suh, Y. B. Kim and S. P. Joshi.
 202. TMS Annual Meeting and Exposition, Seattle, WA, Feb. 14-18, 2010, "Visualization of Failure Mechanisms in Nanocrystalline Thin Films." With K. Jonnalagadda, J. Sharon, K. J. Hemker.
 203. TMS Annual Meeting and Exposition, Seattle, WA, Feb. 14-18, 2010, "UFG Aluminum Alloy Tested in Dynamic High Temperature Compression." With E.L. Huskins.
 204. TMS Annual Meeting and Exposition, Seattle, WA, Feb. 14-18, 2010. "Deformation Twinning in High-Strain-Rate sheared Nanocrystalline Aluminum." With B. Cao, B. Li, N.P. Daphalapurkar and E. Ma.
 205. TMS Annual Meeting and Exposition, Seattle, WA Feb. 14-18, 2010, "Grain Size Effects on the Rate-Sensitivity of FCC Metals." With E.L. Huskins and B. Cao. Invited.

206. International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL. Jan. 24-29, 2010. "Failure mechanisms of Aluminum Nitride under uniaxial and confined dynamic compression." With G.Hu* and J.W. McCauley.
207. International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL. Jan. 24-29, 2010. "Modeling the confined failure of brittle materials with interacting micro-cracks," With G.Hu, J. Kimberley, B. Paliwal.
208. International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL. Jan. 24-29, 2010. "Dynamic compressive strength of micron and sub-micron grain polycrystalline spinel." Kimberley, J., Ramesh, K.T., McCauley, J.W., Patel, P.
209. International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL. Jan. 24-29, 2010. "Computational Estimate of the Variability in Failure Strengths of Ceramics containing Pre-existing Defects." With N. Daphalapurkar, L. Graham-Brady & J.F. Molinari.
210. USNCCM-X, Columbus, OH July 16-19, 2009. "Predicting variability of the failure strength in materials with pre-existing defects through computational modeling." With N.P. Daphalapurkar, S. Levy, J.F. Molinari and L.L. Graham-Brady.
211. APS Shock Compression of Condensed Matter, June 28 – July 3, 2009, "The Mechanics of Nanomaterials." With S.P. Joshi, E.L. Huskins, B. Cao, H. Zhang, C. Eberl, J. Schoenung, E.J. Lavernia, J. Ye, R. Vogt, K. Cho, G. Gazonas, T.W. Wright.
212. APS Shock Compression of Condensed Matter, June 28 – July 3, 2009, "Length Scales and Nanomaterials."
213. APS Shock Compression of Condensed Matter, June 28 – July 3, 2009, "Spallation of 1100-O aluminum under plate impact loading." With C. Williams and D. Dandekar.
214. Summer BioEngineering Conference, Lake Tahoe, CA, June 17-21, 2009. "Application of Diffusion Tensor Imaging in Modeling Diffuse Axonal Injury." With Rika Wright.
215. SEM, Albuquerque, NM, June 1-3, 2009, "Microcompression Experiments on Single Crystal Magnesium." With C. Byer.
216. SEM, Albuquerque, NM, June 1-3, 2009, "Uniaxial and confined dynamic compression of Aluminum Nitride." With Guangli Hu, J.W. McCauley and Buyang Cao.
217. SEM, Albuquerque, NM, June 1-3, 2009, "Strengthening of Aluminum Alloy Under High Temperature and Dynamic Loading." With E. Huskins, B. Cao, T. Topping, E. Lavernia and B. Ahn.
218. SEM, Albuquerque, NM, June 1-3, 2009, "Failure of quartz crystals under dynamic compression." With J. Kimberley.
219. SEM, Albuquerque, NM, June 1-3, 2009, "Deformation Mechanisms of Aluminum Alloy under High Temperature Dynamic Loading." With E. Huskins.
220. 40th LPSC, The Woodlands, TX, Mar. 23-27, 2009. "Strain rate and dynamic fracturing in planetary-scale impacts." With C. M. Ernst*, O. S. Barnouin-Jha, P. K. Swaminathan, and J. Kimberley.
221. 40th LPSC, The Woodlands, TX, Mar. 23-27, 2009. "Visualization of high-and low-rate compressive failure of quartz." With J. Kimberley*, O.S. Barnouin-Jha, P.K. Swaminathan and C.M. Ernst.
222. IUTAM Symposium on Dynamic Fracture & Fragmentation, Austin, TX, Mar. 8-11, 2009. "A statistically informed view of dynamic instability and failure in materials." With T.W. Wright*.
223. IUTAM Symposium on Dynamic Fracture & Fragmentation, Austin, TX, Mar. 8-11, 2009. "The Processes of Massive Dynamic Failure."
224. TMS 2009, San Francisco, CA. February, 2009. "A statistical view of high-rate material instability and failure." With T.W. Wright*.
225. TMS 2009, San Francisco, CA. February, 2009. "Dislocations and Their Configurations in Mg and Mg Alloys." With B. Li* and E. Ma.

226. TMS 2009, San Francisco, CA. February, 2009. "Length-scale Dependent Failure of Hierarchical Composites." With S.P. Joshi.
227. International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 2009. "Uniaxial & confined dynamic compression on AlN." With G. Hu* and J.W. McCauley.
228. International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 2009. "Analysis of Local Strain-Rate Dependent Strength in Brittle Materials with Penny-shaped cracks & pores." With C. Zingale, L. Graham-Brady*.
229. MRS Fall Meeting, Boston, MA, December, 2008: Grain Size and Sample Size Effects on the Rate-dependent Deformation and Failure of Nanocrystalline Metals. With S.P. Joshi, B. Cao, E. Huskins. Invited.
230. MRS Fall Meeting, Boston, MA, December, 2008: Size Independent Strength and Deformation Mode in Compression of a Pd-based Metallic Glass. With *B.E. Schuster, T.C. Hufnagel.
231. 26th Army Science Conference, Orlando, FL. December, 2008: Dynamic Failure Processes Under Confining Stress in AlON, a Transparent Polycrystalline Ceramic. With B. Paliwal, J.W. McCauley, M. Chen.
232. ASME International Mechanical Congress & Exposition, Boston, MA. October, 2008: Internal Rupture in a Viscoplastic Solid. With T.W. Wright.
233. 2nd Biennial IEEE/RAS-EMBS International Conference on Biomedical Robotics and Biomechanics, Scottsdale, AZ. October, 2008: With S. Misra, K. Reed, A. Douglas, A. Okamura.
234. International Conference on Tungsten, Refractory & Hardmetals VII, Washington D.C. August, 2008: On the Microscale compressive properties of BCC metals. With B.E. Schuster, L.S. Magness, Q. Wei.
235. Asteroids, Comets and Meteors 2008, Baltimore, MD, July, 2008: Advances in Experimental Fracture Mechanics: Applications to Fragmentation and Cratering. With J. Kimberley, O.S. Barnouin-Jha, C. Ernst and P.K. Swaminathan.
236. ASME 2008 Summer Bioengineering Conference, Marco Island, FL, June, 2008: Anisotropic Modeling of Fibrous White Matter. With *Rika Wright.
237. SEM 2008 International Congress & Exposition on Experimental & Applied Mechanics, Orlando, FL, June, 2008: Deformation Mechanisms in Nanomaterials. With S.P. Joshi, B. Cao, E. Huskins. Invited.
238. Dynamic Void Growth in a Viscoplastic Material, New Models and Hydrocodes, Lisbon, May, 2008. With T.W. Wright.
239. Force Protection Workshop, University of California, Santa Barbara, March, 2008: Defects, Distribution and Dynamic Failure. With B. Paliwal, F. Zhou, T.W. Wright, J.F. Molinari, O. Barnouin-Jha. Invited.
240. 137th TMS Annual Meeting & Exhibition, New Orleans, LA. March, 2008: Simulation of Dislocation Slip and Twinning in Tensile Deformation of Single Crystal Magnesium. With B. Li, E. Ma.
241. 137th TMS Annual Meeting & Exhibition, New Orleans, LA. March, 2008: Rate Dependent Characteristics of Pure Magnesium and AD60 Alloy. With S.P. Joshi, B. Li, E. Ma and T. Mukai.
242. 39th Lunar and Planetary Science Conference, League City, TX, March, 2008: Advances in Experimental Fracture Mechanics: Applications to Planetary Cratering. With O.S. Barnouin-Jha and P.K. Swaminathan.
243. 32nd International Conference & Expo., Advanced Ceramics and Composites, Daytona Beach, FL January 2008: Effects on Confinement on the Dynamic Failure of Brittle Materials: Experiments and Micro-mechanical Modeling. With B. Paliwal, J.W. McCauley.
244. 32nd International Conference & Expo., Advanced Ceramics and Composites, Daytona Beach, FL. January 2008: Microcompression Experiments on AlON Single Crystals. With B. Paliwal, B. Schuster, B. Cao.
245. International Conference on Multiscale Modeling and Simulation (ICMMS), Bangalore, India, January 2008: Modeling Massive Dynamic Failure Processes. Invited.
246. ASME International Mechanical Engineering Conference and Exposition, Seattle, Nov. 2007: Effects of the Strain rate and Confinement on Brittle Failure: An Interacting Micro-crack Damage Model. With B. Paliwal,* J.W. McCauley.
247. ASME International Mechanical Engineering Conference and Exposition, Seattle, Nov. 2007: Rate Dependent Mechanical Response of Hierarchical Composites: Experiments and Modeling. With E. Huskins, * S.P. Joshi.

248. American Physical Society, Shock Compression of Condensed Matter, Kauai, June 2007: Finite element based micromechanical modeling of brittle materials under compressive loading. With R. Kraft,* J.F. Molinari.
249. American Physical Society, Shock Compression of Condensed Matter, Kauai, June 2007: A parallel multiscale model for brittle materials using a finite element based micromechanical model and homogenization theory. With R. Kraft,* J.F. Molinari.
250. Army Symposium on Solid Mechanics, Baltimore, 2007. Finite Element Based Micromechanical Modeling Of A Brittle Ceramic Under Compressive Loading. With Reuben Kraft* & Jean-François Molinari.
251. International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, January 2007: Confined Compressive Failure of AlON. With B. Paliwal,* J.W. McCauley.
252. Hypervelocity Impact Symposium, Williamsburg, June 2007: Improved fragment size distributions from post-processed hydrocode simulations. With J.P. Meulbroek,* P.K. Swaminathan, A. M. Lennon.
253. International Conference on Experimental Mechanics, Alexandropoulos, Greece, July 2007: Instabilities in Nanostructured Materials. With S.P. Joshi, B.E. Schuster.
254. ASME Mechanics and Materials Conference, Austin TX, June 2007: High Strain Rate Dependence of Nano-Micro Al 5083 as Compared to Conventional Material. With E.L. Huskins,* S.P. Joshi, A.P. Newbery, E.J. Lavernia.
255. ASME Mechanics and Materials Conference, Austin TX, June 2007: A Self-Consistent Statistical Theory for the Dynamics of Void Growth in Ductile Materials. With T.W. Wright.*
256. ASME Mechanics and Materials Conference, Austin TX, June 2007: Comparative study of dynamic deformation mechanisms of fcc and bcc metals with ultrafine and nanocrystalline microstructures. With L.J. Kecskes, Q. Wei, B.E. Schuster.*
257. Materials Research Society Fall Meeting, Boston, December 2007: Bulk and Micro-Scale Compressive Properties of a Pd-based Metallic Glass. With B.E. Schuster,* Q. Wei, T.C. Hufnagel.
258. Bulk Nanostructured Materials, Ufa, Ukraine, 2007: Microstructure and Mechanical Behavior of Ultrafine Grained Tantalum Processed by Equal Channel Angular Extrusion up to 16 Passes. With Q. Wei,* S.N. Mathaudhu, L.J. Kecskes, K.T. Hartwig and R.Z. Valiev.
259. SAMPE Annual Meeting, Baltimore, 2007: Modifications to the Compression Kolsky Bar for Characterizing Soft Biomaterials at Impact Loading Rates. With A.M. Lennon,* A.C. Merkle, J.C. Roberts, M. Pirtini.
260. World Haptics Conference, Tsukuba, Japan, 2007: Force Feedback is Noticeably Different for Linear versus Nonlinear Elastic Tissue Models. With Sarthak Misra* & Allison M. Okamura.
261. Annual Meeting of TMS, Orlando, 2007: A Mechanistic Model For Shear Bands In Nanostructured Materials. With Shailendra Joshi. *Invited.*
262. Annual Meeting of TMS, Orlando, 2007: Techniques for the Measurement of the High-Strain-Rate Deformations of Materials. *Invited.*
263. Annual Meeting of TMS, Orlando, 2007: The High-Strain-Rate Deformations of Structural and Nanocrystalline Metals. With K. J. Hemker & E. Ma. *Invited.*
264. Annual Meeting of TMS, Orlando, 2007: Plastic Processes Leading to Damage and Failure. With T.W. Wright*. *Invited.*
265. Annual Meeting of TMS, Orlando, 2007: Rate Dependent Behavior of Ultrafine Grained Magnesium Alloy. With Azevedo, K, Joshi, SP and Ma, E.
266. U.S. National Congress on Theoretical and Applied Mechanics, Boulder, CO, 2006: Adiabatic Shear Banding in Ductile Materials and Bulk Metallic Glass under Impact Loading. With F. Zhou.
267. Annual Meeting of the Society for Experimental Mechanics, Springfield, MA, June 2006: Compressive Micromechanical Probing for Advanced Materials. With B.E. Schuster, H. Zhang, T.C. Hufnagel, Q. Wei.
268. Society of Engineering Science, Texas A&M, October, 2007: A Self-Consistent Statistical Theory for the Dynamics of Void Growth in a Viscoplastic Material. With T.W. Wright.*
269. U.S. National Congress on Computational Mechanics, San Francisco, 2007: Finite-element based modeling of damage in brittle materials: from micro to macro. With R. Kraft,* J.F. Molinari.

270. Army Science Conference, 2006: High-Speed Transmission Shadowgraphic and Dynamic Photoelasticity Study Of Stress Wave And Impact Damage Propagation In Transparent Materials And Laminates Using The Edge-On Impact (EOI) Method. With Elmar Strassburger, Parimal Patel, James W. McCauley*, Christopher Kovalchick & Douglas W. Templeton.
271. Army Science Conference, 2006: Microcompression of Bulk Metallic Glass and Tungsten - Bulk Metallic Glass Composites. With Brian E. Schuster*, Lee S. Magness, Laszlo J. Kecskes, Qiuming Wei, Michael K. Miller, Mathew H. Ervin, Stephan Hruszkewycz & Todd C. Hufnagel.
272. ASME International Mechanical Engineering Conference and Exposition, Chicago, Nov. 2006: Dynamic Response of Human Brain Tissues. With M. Pirtini, A.M. Lennon, J.C. Roberts, A. Merkle.
273. ASME International Mechanical Engineering Conference and Exposition, Chicago, Nov. 2006: A Mechanistic Model for Plastic Instabilities in Nanostructured Materials. With S.P. Joshi.
274. ASME International Mechanical Engineering Conference and Exposition, Chicago, Nov. 2006: Modeling the compressive brittle failure mechanism. With B. Paliwal.
275. ASME International Mechanical Engineering Conference and Exposition, Chicago, Nov. 2006: A finite element based micromechanical damage model for brittle materials under compressive loading. With J. F. Molinari and R. Kraft.
276. International Conference and Exposition on Advanced Ceramics and Composites, Cocoa Beach, FL, January 2006: Direct observation of Dynamic Compressive Failure of AlON. With B. Paliwal, * J.W. McCauley & P.J. Patel.
277. New Models and Hydrocodes for Shocks in Solids, Dijon, April 9-14, 2006: A New Ductile Spall Model Based on Dynamics of Void Growth. With T.W. Wright and A. Molinari.
278. DYMAT, Dijon, France, Sept. 2006: A New Ductile Spall Model Based on Dynamics of Void Growth. With T.W. Wright.
279. Materials Science and Technology Conference, Cincinnati, 2006: Microcompression of Nanocrystalline and Amorphous Metals. With B.E. Schuster, Q. Wei, H. Zhang, M.H. Ervin, M.K. Miller, S. Hruszkewycz, T.C. Hufnagel.
280. U.S. National Congress on Theoretical and Applied Mechanics, Boulder, CO, 2006: Adiabatic Shear Banding in Ductile Materials and Bulk Metallic Glass under Impact Loading. With F. Zhou.
281. Annual Meeting of the Society for Experimental Mechanics, St. Louis, MO, June 2006: Dynamic Damage Nucleation and Growth in Ceramics. With B. Paliwal & J.W. McCauley.
282. Annual Meeting of the Society for Experimental Mechanics, St. Louis, MO, June 2006: Dynamic Damage Nucleation and Growth in Ceramics. With B. Paliwal & J.W. McCauley.
283. Annual Meeting of the Society for Experimental Mechanics, St. Louis, MO, June 2006: Mechanical Properties of Soft Human Tissues under Dynamic Loading. With H. Saraf, A.M. Lennon, A.C. Merkle & J.C. Roberts.
284. Annual Meeting of the Society of Engineering Science, State College, PA, Aug. 2006: Continuum-atomistic analysis of tension instability in carbon nanotubes: The effect of multi-body interaction. With K. Volokh.
285. TMS Annual Meeting, San Antonio, March 2006: Remarkable Dynamic Mechanical Properties of a “Trimodal” Al 5083/B₄C Composite. With H. Zhang, S.P. Joshi, J. Ye, J. M. Schoenung & E.S.C. Chin.
286. TMS Annual Meeting, San Antonio, March 2006: Mechanical Modeling of Bimodal Al-5083 Alloys. With S.P. Joshi, H. Zhang, J. M. Schoenung, E. J. Lavernia & E.S.C. Chin.
287. Keynote Lecture, International Conference on Computational and Experimental Sciences, Chennai, Dec. 1-6, 2005: The Mechanical Behavior and Dynamic Failure of Nanometals and Nanoceramics.
288. Materials Research Society, Boston, Dec. 2005. Dynamic flow localization in commercial purity tungsten driven by ultrafine grained and nanocrystalline microstructures. With Q. Wei, B. H. Schuster, K. T. Ramesh, E. Ma, L. J. Kecskes, R. J. Dowding, K. Cho, R. Z. Valiev.
289. Materials Research Society, Boston, Dec. 2005. Microcompression of nanocrystalline and amorphous materials. With Q. Wei, B. E. Schuster, H. Zhang.

290. ASME International Mechanical Engineering Conference and Exposition, Orlando, Nov. 6-11, 2005. Effects of Prior Shock on Void Nucleation and Growth in Spall. With T.W. Wright and A. Molinari.
291. ASME International Mechanical Engineering Conference and Exposition, Orlando, Nov. 6-11, 2005. Fragmentation of Ductile Materials due to Multiple Shear Banding. With F. Zhou* & T.W. Wright.
292. ASME International Mechanical Engineering Conference and Exposition, Orlando, Nov. 6-11, 2005. Dynamic Failure of Ceramics. With B. Paliwal*, J.W. McCauley & P. Patel.
293. ASME International Mechanical Engineering Conference and Exposition, Orlando, Nov. 6-11, 2005. Effects of Interfacial Debonding on Rate-Dependent Constitutive Behavior of Metal-Matrix Composites, with Zhang* and Chin.
294. Hypervelocity Impact Symposium, Lake Tahoe, Sept. 2005: An Elastic-Visco-Plastic Analysis of the Expanding Ring. With F. Zhou* & J.F. Molinari.
295. APS Shock Physics Conference, Baltimore, 2005: Status of Statistical Modeling for Damage from Nucleation and Growth of Voids. With T.W. Wright.*
296. APS Shock Physics Conference, Baltimore, 2005: Hydrocode postprocessing study of optical signatures from fragment distributions. With P. K. Swaminathan,* Jeff C. Taylor, Jean-Francois Molinari and Fenghua Zhou.
297. APS Shock Physics Conference, Baltimore, 2005: Void Nucleation and Growth in Shocked Materials. With T.W. Wright and A. Molinari.
298. American Ceramic Society, Baltimore, 2005: Dynamic failure of AlON under uniaxial and biaxial compression. With B. Paliwal,* J.W. McCauley & P.J. Patel.
299. TMS Spring Conference, 2005: Plastic Flow Localization and Shear Banding in Tungsten. With Q. Wei,* E. Ma, L.J. Kecskes, L. Magness, R.J. Dowding and R.Z. Valiev.
300. International Conference on Bulk Metallic Glasses IV, 2005: "Micromechanics of deformation in metallic-glass-matrix composites." With R. T. Ott, F. Sansoz, J. F. Molinari, J. Almer & T. C. Hufnagel.*
301. Dynamic Ductile Fracture Workshop, Naval Surface Warfare Center, Carderock, MD, Feb. 7-8, 2005: "Void nucleation and growth under shock loading." With T.W. Wright & A. Molinari.
302. International Conference and Exposition on Advanced Ceramics and Composites, Cocoa Beach, FL, January 2005: "Dynamic Failure of AlON under Uniaxial Compression." With B. Paliwal*, J.W. McCauley & P.J. Patel.
303. International Conference on Plasticity and its Applications, Kauai, HI, January 2005: "Void Nucleation and Growth under Shock Loading." With T.W. Wright and A. Molinari.
304. ASME IMECE, Symposium on High Rate Behavior of Ductile Materials, Anaheim, November 2004: "The Very High Strain Rate Behavior of Metals."
305. ASME IMECE, Symposium on High Rate Behavior of Ductile Materials, Anaheim, November 2004: "A Model for Dynamic Fragmentation." With J.F. Molinari* & F. Zhou.
306. 3rd International Symposium on the Science of Engineering Ceramics, Osaka, Japan, November 2004: "The Materials Centers of Excellence: A New Model for Government – University Collaborations." With D. Niesz & J.W. McCauley.*
307. TMS Materials Science and Technology Conference 2004, New Orleans, September 2004: "A Model for the High Strain Rate Response of BCC Metals."
308. Annual Meeting of the Society of Engineering Science, Lincoln NE, September 2004: "Fragmentation of a Dynamically Expanding Brittle Ring." With F. Zhou* and J.-F. Molinari.
309. Society for Experimental Mechanics, Costa Mesa, June 2004: "The Behavior of Aluminum Alloys at High Strain Rates."
310. International Conference and Exposition on Advanced Ceramics and Composites, Cocoa Beach, FL, January 2004: "Dynamic Fragmentation Investigation: Strain Rate Effects on Fragment Size and Fragment Size Distributions." With F. Zhou* & J.F. Molinari.

311. International Conference and Exposition on Advanced Ceramics and Composites, Cocoa Beach, FL, January 2003: “Mechanical Behavior of Dense Nanocomposite Structures.” With B.W. McEnerney*, R.K. Sadangi, V. Shukla, H. Wang, B.H. Kear, and D.E. Niesz.
312. Annual Meeting of the American Ceramic Society, Nashville, TN, April 2003: “Army Research Laboratory Material Centers of Excellence,” with J. W. McCauley*, E.S.C. Chin, J. Adams, and D. E. Niesz.
313. TMS Fall Meeting (Materials Science & Technology 2003), Chicago, October 2003: “Effects of Processing on High Strain Rate Response of Boron Carbide Particulate Reinforced 6092 Aluminum,” (invited). With H. Zhang* and E.S.C. Chin.
314. ASME International Mechanical Engineering Congress & Exposition, Washington, D.C., November 16-21, 2003. “Influence of Martensitic Transformation on the Durability of TBC Systems,” (invited) With Chen, M.W., Glynn, M.L., Pan, D., Hemker, K.J.*, Ott, R.T., and Hufnagel, T.C.
315. ASME International Mechanical Engineering Congress & Exposition, Washington, D.C., November 16-21, 2003. “Dynamic Failure and Damage Mechanisms in Multiphase Materials,” (invited).
316. MRS Fall Meeting, Boston, MA, December 2003. “Dilatation of metallic-glass matrix composites under uniaxial compression.” With Cang Fan*, Tong Jiao, R. T. Ott, K. Laszlo and T. C. Hufnagel.
317. APS Shock Physics Meeting, Portland, OR, June 2003: “Progress in computational models for damage from shear bands and voids.” With T.W. Wright*, S. Schoenfeld, and X. Wu.
318. TMS Annual Meeting & Exhibition, Seattle, Washington, February 17-21, 2002: Shear Banding as the Dominant Deformation Mechanism in Nanophase and Ultrafine-grained Iron. D. Jia, Q. Wei, E. Ma* and K. T. Ramesh.
319. Biomaterials, San Francisco, 2002: Newly Designed Collagen-Coated Silicone Chamber Facilitates Dynamic Chondrocyte Culture. Y. Xing; K. T. Ramesh; A. Polotsky; D. S. Hungerford; C. G. Frondoza
320. MRS Fall Meeting, Boston, MA, December 2002: Mechanisms of dynamic failure in metallic glasses. T. Jiao, L. J. Kecskes, T. C. Hufnagel, and K. T. Ramesh.
321. 14th US Congress on Applied Mechanics, Blacksburg, VA, June 24-28, 2002: Effects of Grain Size on the Shear Localization of Iron. Q. Wei, D. Jia, K. T. Ramesh and E. Ma.
322. 14th US Congress on Applied Mechanics, Blacksburg, VA, June 24-28, 2002: The Dynamic Growth of A Single Void in A Viscoplastic Material under Transient Hydrostatic Loading. X. Wu, K. T. Ramesh & T.W. Wright.
323. Society of Engineering Science Annual Meeting, Pennsylvania State University, October 2002: Modeling Damage With Shear Bands And Voids In Metals. T.W. Wright, S.E. Schoenfeld, K.T. Ramesh, and X.Y. Wu.
324. TMS Annual Meeting & Exhibition, Seattle, Washington, February 17-21, 2002: Crystallization and mechanical behavior of (Hf, Zr)-Ti-Cu-Ni-Al metallic glasses. X. Gu, T. Jiao, L. J. Kecskes, R. H. Woodman, C. Fan, K. T. Ramesh and T. C. Hufnagel.
325. 14th US Congress on Applied Mechanics, Blacksburg, VA, June 24-28, 2002: Shear Band Development In A Bulk Metallic Glass Under Dynamic Loading. T. Jiao, K.T. Ramesh, T. Hufnagel, C. Fan.
326. ASME International Mechanical Engineering Congress, New Orleans, Louisiana, Nov 17-22 U.S.A., 2002: Mechanical Behavior of Ceramics under Impact Loading. F. Zhou, T. Jiao, H. Wang, J.F. Molinari and KT Ramesh.
327. NATO Symposium on Combat Survivability of Air, Sea, and Land Vehicles, 2002: Design of Graded Metal Matrix Composites for Ceramic Armor. E.S.C. Chin*, Y. Li & Ramesh, K.T.PACRIM IV, American Ceramic Society, Hawaii, Nov. 2001: “Designing Armor Metal-Ceramic Composites,” with Chin, McCauley & Li. Presented by Chin.
328. ASME Mechanics and Materials Conference, San Diego, June 26-29, 2001: “The Failure Of Metal-Ceramic Composites Under Compression, Tension And Torsion,” with Y. Li, K.T. Ramesh & E. S. C. Chin. Invited.
329. ASME Mechanics and Materials Conference, San Diego, June 26-29, 2001: “A Novel Specimen Design for the Torsional Kolsky Bar: Application to an A359/SiCp MMC,” with Y. Li, K.T. Ramesh & E. S. C. Chin.

330. ASME Mechanics and Materials Conference, San Diego, June 26-29, 2001: "Experimental Verification of the Desktop Kolsky Bar Apparatus at Strain Rates Above 10^4 s^{-1} using the LORD Approach," with Y. Li, D. Jia & K.T. Ramesh. Invited.
331. ASME Mechanics and Materials Conference, San Diego, June 26-29, 2001: "The Dynamic Growth of Voids," with X.Y. Wu, K.T. Ramesh & T.W. Wright. Presented by Wright.
332. ASME Mechanics and Materials Conference, San Diego, June 26-29, 2001: "The Finite Deformations of Compliant Active Materials: Experiments and Modeling," with S.P. Marra, K.T. Ramesh & A.S. Douglas. Invited.
333. Annual Meeting of TMS, New Orleans, Feb. 11-15, 2001: "Effects of High Rates of Loading on the Deformation Behavior and Failure Mechanisms of HCP Metals and Alloys."
334. International Conference on Theoretical and Applied Mechanics, Chicago, Aug. 2000: "Dynamic Response of Uniaxial Continuous Fiber-Reinforced Metal Matrix Composites," with Li & Chin.
335. Symposium on Biologically Inspired Materials, Society of Experimental Mechanics, Orlando, June 2000: "Constitutive Response Of Active Polymer Gels," with Marra & Douglas. Invited.
336. ASME International Mechanical Engineering Congress and Exposition, Orlando, Nov. 2000. "Impact Response of FGM Structures," with Li and Chin. Invited.
337. ASME International Mechanical Engineering Congress and Exposition, Orlando, Nov. 2000. "From Microstructures to Nanostructures: The Behavior of Materials at Very High Rates of Deformation," with Jia. Invited.
338. Symposium on Electroactive Polymers, Materials Research Society, Boston, Dec. 1999. "Constitutive Response of Active Polymer Gels," with Marra & Douglas. Presented by S. P. Marra.
339. ASME International Mechanical Engineering Congress and Exposition, Nashville, Nov. 1999. "Deformation and Failure of Nanostructured Iron," with Jia and Ma.
340. ASME International Mechanical Engineering Congress and Exposition, Nashville, Nov. 1999. "Void Nucleation and Growth within Adiabatic Shear Bands."
341. Fall Meeting of TMS, Cincinnati, Oct. 1999. "Observations and Modeling of Dynamic Compressive Damage in Metal Matrix Composites," with Li & Chin.
342. ASME Mechanics & Materials Conference, Blacksburg, VA, June 1999: "Finite Deformations of Materials Subjected to Electromagnetic Fields and Mechanical Forces," with Bilyk & Wright. Presented by S. Bilyk.
343. ASME Mechanics & Materials Conference, Blacksburg, VA, June 1999: "Influence of Strain Rate on the Mechanical Properties of Nanocrystalline Metals," with Jia. Presented by D. Jia.
344. ASME Mechanics & Materials Conference, Blacksburg, VA, June 1999: "Determination of the Viscoplastic Behavior of Materials in Tension," with Li. Presented by Y. Li.
345. ASME Mechanics & Materials Conference, Blacksburg, VA, June 1999: "Shear Localization in BCC Materials," with A.M. Lennon.
346. ASME Mechanics & Materials Conference, Blacksburg, VA, June 1999: "Applications of the Kolsky Bar to the Study of Liquids, Powders and Amorphous Solids."
347. 15th U.S. Army Symposium on Solid Mechanics, Myrtle Beach, SC, April 1999: "Experimental Determination of Dynamic Fracture Toughness using Three-point Bend Specimens." Presented by Y. Li.
348. SPIE Smart Materials & Structures Conference, Newport Beach, CA, March 1999: "Mechanical Properties of active PolyAcryloNitrile Gels" with Marra & Douglas. Presented by S.P. Marra.
349. International Symposium on Advances in Twinning, San Diego, March 1999: "The Influence of Deformation Twinning on the Mechanical Response of α -Titanium." Invited.
350. ASME International Mechanical Engineering Congress and Exposition, Anaheim, CA, November 1998: "Dynamic Characterization of a Layered Structure," with Y. Li. Invited.
351. ASME International Mechanical Engineering Congress and Exposition, Anaheim, CA, November 1998: "Optical Strain Measurement in the Tension Kolsky Bar: Application to the Dynamic Failure of Composites," with Y. Li.

352. ASME International Mechanical Engineering Congress and Exposition, Anaheim, CA, November 1998: "Finite Elastic Deformations of Active PolyAcryloNitrile Gels," with S. Marra & A.S. Douglas. Invited.
353. 1998 Annual Meeting of the Society of Engineering Science, Pullman, WA, September 1998: "Influence of Crystal Structure on the Dynamic Behavior of Materials at High Temperatures," with A.M. Lennon.
354. 1998 Annual Meeting of the Society of Engineering Science, Pullman, WA, September 1998: "Plastic Deformation and Failure in an A359/SiC_p MMC under High-Strain-Rate Tension," with Y. Li and E.S.C. Chin.
355. 1998 Annual Meeting of the Society of Engineering Science, Pullman, WA, September 1998: "Mechanical Properties of Tungsten-Silica Composites," with D. Jia.
356. National Congress on Theoretical and Applied Mechanics, Gainesville, FL, July 1998: "The Dynamic Behavior and Damage of a Metal-Matrix Composite at High Rates of Strain in Compression," with Y. Li & E.S.C. Chin.
357. National Congress on Theoretical and Applied Mechanics, Gainesville, FL, July 1998: "Adiabatic Shear Localization in BCC Metals: Polycrystalline Vanadium," with A.M. Lennon. Invited.
358. National Congress on Theoretical and Applied Mechanics, Gainesville, FL, July 1998: "High-Strain-Rate Pressure-Shear Recovery: A New Experimental Technique," with D. Jia & A.M. Lennon.
359. National Congress on Theoretical and Applied Mechanics, Gainesville, FL, July 1998: "Thermal Softening in Compression at High Strain Rates," with A.M. Lennon.
360. National Congress on Theoretical and Applied Mechanics, Gainesville, FL, July 1998: "Adiabatic Shear Localization in Alpha-Titanium: Experiments, Modeling, and Microstructural Evolution," with D.R. Chichili & K.J. Hemker. Invited.
361. SPIE Smart Materials & Structures Conference, San Diego, CA, March 1998: "The Mechanical and Electromechanical Properties of a 0-3 Ca-modified PbTiO₃/P(VDF-TrFE) Composite." Presented by S.P. Marra.
362. ASME International Mechanical Engineering Conference & Exposition, Dallas, TX, November 1997: "The Dynamic Behavior of Metal-Ceramic Composites: Application To Graded Structures," with Y. Li. Invited.
363. International Conference on Tungsten and Refractory Metals, FL, October 1997: "The Dynamic Behavior of a Tungsten-Hafnium Composite for Kinetic Energy Penetrator Applications," with S. Yadav & Y. Zhang.
364. ASME Summer Meeting, Applied Mechanics Division, Evanston, IL, June 1997: "Shearing Failures in Hafnium, Titanium and Titanium Alloys." Presented by S. Yadav. Invited.
365. ASME Summer Meeting, Applied Mechanics Division, Evanston, IL, June 1997: "Influence Of Particle Volume Fraction On The Dynamic Behavior Of Particle-Reinforced Metal-Matrix Composites." Presented by Y. Li. Invited.
366. 1997 Annual Meeting of the Society of Rheology, Galveston, TX, March 1997: "The Strength and Compressibility of Liquids." Invited.
367. 1997 SPIE Smart Materials & Structures Conference, San Diego, CA, February 1997: "The Mechanical Properties of Compliant Piezoelectric Composites." Presented by S.P. Marra.
368. 1996 ASME International Mechanical Engineering Conference & Exposition, Atlanta, GA, November 1996: "The Compressibility and High-Rate Shearing Response of an Elastohydrodynamic Lubricant: Experiments and Molecular Modeling."
369. 1996 ASME Mechanics & Materials Conference, Baltimore, MD, June 1996: "Deformation Mechanisms and High-Strain-Rate Behavior of Alpha-Titanium." Presented by D.R. Chichili.
370. 1996 ASME Mechanics & Materials Conference, Baltimore, MD, June 1996: "Dynamic Compaction and Shear of Particulate Materials." Presented by C.A. Collins.
371. The Society of Engineering Science, New Orleans, LA, October 1995: "Finite Deformations and the Dynamic Measurement of Radial Strains in Compression Kolsky Bar Experiments."
372. Annual ASME/STLE Joint Tribology Conference, Kissimmee, FL, October, 1995: "The Behavior of Elastohydrodynamic Lubricants at Moderate Pressures and Shear Rates." Presented by Y. Zhang.
373. International Conference on Metallurgical and Materials Applications of Shock Wave and High Strain Rate Phenomena, El Paso, TX, 1995: "High Strain Rate Behavior of Tungsten-Based Composites."

374. International Conference on Tungsten & Refractory Metals, McLean VA, October 1995: “Mechanical Properties of Polycrystalline Tungsten.” Presented by A.M. Lennon.
375. Symposium on Material Instabilities, ASME International Mechanical Engineering Convention, Chicago, IL, November 1994: “The Influence of Porosity and Porosity Evolution on the Localization of Deformations in Metals.” Presented by M. G. da Silva. Invited.
376. ASME International Mechanical Engineering Congress & Exposition, Chicago, IL, November 1994: “High Strain Rate Deformation Mechanisms in Alpha Titanium.” Presented by D.R. Chichili.
377. International Conference on Tungsten & Refractory Metals, McLean, VA, October 1994: “High Strain Rate Deformations in Tungsten Single Crystals.” Presented by E. Horwath.
378. International Conference on Tungsten & Refractory Metals, McLean, VA, October 1994: “The High Strain Rate Behavior of Tungsten-Based Composites.” Presented by S. Yadav.
379. Symposium on Dynamic Behavior of Materials, TMS-ASM Meeting, Anaheim, CA, October 1994: “Observations of High Rate Deformation Mechanisms in Alpha Titanium,” with Chichili & Hemker. Invited.
380. Symposium on Dynamic Behavior of Materials, TMS-ASM Meeting, Cleveland, OH, October 1994: “Dynamic Behavior of a Metal-Matrix Composite.” Invited.
381. Symposium on Dynamic Behavior of Materials, TMS-ASM Meeting, October 1994: “High Strain Rate Pressure-Shear Experiments on a Tungsten-Based Composite.”
382. Symposium on Dynamic Failure Mechanics, SES Annual Meeting, College Station, TX, October 1994: “Dynamic Failure Mechanisms in a Metal-Matrix Composite.”
383. Twelfth U.S. National Congress of Theoretical and Applied Mechanics, Seattle, WA, June 1994: “Inhomogeneous Shear Flow and Localization in High-Rate Rheometry.”
384. Twelfth U.S. National Congress of Theoretical and Applied Mechanics, Seattle, June 1994: “EHD Lubricant Behavior at Moderate Pressures and High Shear Rates.”
385. Twelfth U.S. National Congress of Theoretical and Applied Mechanics, Seattle, June 1994: “Dynamic Behavior of Porous Iron: Experiments and Modeling.”
386. Twelfth U.S. National Congress of Theoretical and Applied Mechanics, Seattle, June 1994: “The High Strain Rate Behavior of a Particle-Reinforced Metal-Matrix Composite.” Invited.
387. Winter Annual Meeting of the ASME, New Orleans, November 1993: “Smart Structures with Applications to Soft Robots.”
388. TMS Fall Meeting, Chicago, October 1993: “The Deformation and Fracture of Tungsten-Based Composites.”
389. International Symposium on Plasticity and its Applications, Baltimore, July 1993: “The Deformation and Failure of Tungsten-Based Composites.”
390. International Symposium on Plasticity and its Applications, July 1993: “The Rate-Dependent Deformations of Porous Iron.” Invited.
391. Army Symposium on Solid Mechanics, Aug. 1993: “The Deformation and Failure of Tungsten-Based Composites.”
392. Army Symposium on Solid Mechanics, Aug. 1993: “Microstructural Influences on the Deformation and Failure of Tungsten Heavy Alloys.”
393. The Society of Engineering Science, Charlottesville, June 1993: “Damage and Recovery Experiments Using Pressure-Shear Plate Impact.”
394. Annual Meeting of The Metallurgical Society, Denver, CO, Feb. 1993: “The Deformation and Failure of Porous Iron.”
395. Annual Meeting of The Metallurgical Society, Denver, CO, Feb. 1993: “The Dynamic Deformation of an Aluminum/Alumina Composite.”
396. International Conference on Tungsten and its Alloys, Washington, DC, Nov. 1992: “Shear Localization in a Tungsten Heavy Alloy.”

397. Winter Annual Meeting of the ASME, Anaheim, Nov. 1992: "Finite Deformation Analysis of Pressure-Shear Plate Impact Experiments on Elastohydrodynamic Lubricants."
398. Annual ASME/STLE Tribology Conference, San Diego, CA, Oct. 1992: "The Rheology of Lubricants at High Shear Rates."
399. The Society of Engineering Science, La Jolla, Sept. 1992: "Shear Localization in Tungsten Heavy Alloys."
400. The Society of Engineering Science, La Jolla, Sept. 1992: "The Effect of Porosity on Shearing Instabilities in a Titanium Alloy."
401. The Society of Engineering Science, La Jolla, Sept. 1992: "Shear Localization in EHD Lubricants."
402. International Conference on Titanium and its Alloys, San Diego, July 1992: "The Effect of Porosity on the Viscoplastic Response of Sintered Ti-6Al-4V."
403. NSF Design & Manufacturing Conference, Atlanta, Jan. 1992: "Constitutive Models for Porous Metals at High Rates of Deformation."
404. Winter Annual Meeting of the ASME, Atlanta, Dec. 1991: "The Effect of Porosity on the Plastic Response of Metals at High Rates of Deformation."
405. Annual Meeting of the Society of Engineering Science, Gainesville, Nov. 1991: "The Dynamic Shearing of Elastohydrodynamic Lubricants."
406. Annual Meeting of the Society of Engineering Science, Gainesville, Nov. 1991: "Viscoplastic Deformations and Shear Localization in Tungsten Heavy Alloys."
407. Annual Meeting of the Society of Engineering Science, Gainesville, Nov. 1991: "Constitutive Models for Porous Metals deformed at High Rates."
408. Fall Meeting of The Metallurgical Society, Cincinnati, Oct. 1991: "The Influence of Tungsten Content, Swaging, and Grain Size on the Viscoplastic Response of Tungsten Heavy Alloys." Invited.
409. International Conference on the Dynamic Behavior of Materials, Strasbourg, France, Oct. 1991: "Dynamic Behavior of Elastohydrodynamic Lubricants in Shearing and Compression."
410. International Conference on the Dynamic Behavior of Materials, Strasbourg, France, Oct. 1991: "The Constitutive Modeling of Porous Metals at High Rates of Deformation."
411. Twenty-Second Midwestern Mechanics Conference, Rolla, Oct. 1991: "A Numerical Study of the Stability of Shearing in an Elastohydrodynamic Contact," presented by A.S. Douglas.
412. NSF Design & Manufacturing Conference, Austin, Jan. 1991: "Constitutive Models for Porous Metals."
413. 27th Annual Meeting of the Society of Engineering Science, Santa Fe, Oct. 1990: "The Application of Axial and Torsional Kolsky Bars to Studies of the Rheology of Elastohydrodynamic Lubricants."
414. International Conference on Shock-Wave and High-Strain-Rate Phenomena in Materials, La Jolla, Aug90: "The Deformation of Tungsten Alloys at High Strain Rates."
415. Eleventh U.S. National Congress of Applied Mechanics, Tucson, May 1990: "Finite Deformation Analysis of Pressure-Shear Plate Impact Experiments on Elastohydrodynamic Lubricants."
416. Eleventh U.S. National Congress of Applied Mechanics, Tucson, May 1990: "The Viscoplastic Deformation of Tungsten Alloys."
417. Annual ASME/STLE Joint Tribology Conference, Fort Lauderdale, 1989: "On the Rheology of a Traction Fluid."
418. 26th Annual Meeting of the Society of Engineering Science, Ann Arbor, 1989: "The Micromechanics of the Rate Dependent Deformation of a Sintered Tungsten Alloy."
419. Seventh International Conference on Fracture, Houston, 1989: "Failure Modes and Mechanisms in Cermets under Stress-Wave Loading."
420. Annual Review of Progress in QNDE, La Jolla, 1988: "An Ultrasonic Evaluation of Damage in Cermets."
421. 24th Annual Meeting of the Society of Engineering Science, Salt Lake City, 1987: "On the Pressure-Dependent Viscoplastic Deformation of an Amorphous Solid."

422. Tenth U.S. National Congress of Applied Mechanics, Austin, 1986: “The Rheology of EHD Lubricants at High Pressures and High Shear Rates.”
423. Annual Meeting of the American Physical Society, Providence, 1985: “Rheology of Lubricants at High Pressures and High Shear Rates.”

GRANTS AND CONTRACTS

1. *National Science Foundation*, Tribology Program; Research Initiation Award: “Fundamental Experiments in Elastohydrodynamic Lubrication;” \$78,695. 07/01/89 - 06/30/91.
2. *National Science Foundation*, Tribology Program; Research Experiences for Undergraduates Supplement to “Fundamental Experiments in EHD Lubrication;” \$10,000. 07/01/90 - 06/30/91.
3. *National Science Foundation*, Manufacturing Processes Program: “Constitutive Models for Understanding the Effect of Porosity on Localization in Manufacturing Processes,” with P. Ponte-Castañeda (University of Pennsylvania); \$155,928. 09/01/90 - 08/31/92.
4. *Army Research Office*, Engineering Science Program: “Localization in Tungsten Heavy Alloys Subjected to Shearing Deformations Under Superimposed High Pressures;” \$323,318. 05/31/91 - 09/30/94.
5. *National Science Foundation*, Tribology Program: “The Rheology of Elastohydrodynamic Lubricants at High Shear Rates and High Pressures;” \$197,621. 09/01/91 - 08/31/94.
6. *Cabot Corporation*: “The Dynamic Response of Tantalum and Tantalum Alloys;” \$15,153. 1/1/92 - 12/1/92.
7. *Army Research Office*, Engineering Science Program: “An Investigation of the Dynamic Plastic Deformation of Tungsten Single Crystals using Pressure-Shear Recovery;” \$141,234. 6/1/92 - 5/31/95.
8. *National Science Foundation*, Manufacturing Processes Program; Research Opportunity Award: “ROA Supplement to Constitutive Models for Understanding the Effect of Porosity on Localization in Manufacturing Processes,” with A. O. Aning, Morgan State University; \$17,408. 06/01/92 - 08/31/92.
9. *Battelle Scientific Services*: “The Dynamic Mechanical Properties of Tungsten Composites;” \$40,290. 9/94-8/31/95.
10. *Army Research Office*, Engineering Science Program: “The Micromechanics of High Strain Rate Deformation and Failure in Dual-Phase Composites;” \$198,882, with G. Bao. 4/1/94 - 3/31/97.
11. *Army Research Laboratory*, Materials Directorate: “Improvements in Tungsten-based Composites through Modifications in the Rate-Sensitivity of Pure Tungsten;” \$69,998. 10/94 - 9/95.
12. *Army Research Laboratory*, Materials Directorate: “Biomimetics & Active Materials;” \$70,000, with A.S. Douglas. 7/94 - 6/95.
13. *National Science Foundation*, Mechanics & Materials Program: “Fundamental Studies in Adiabatic Shear Localization;” \$223,673, with K.J. Hemker. 8/1/94-7/31/97.
14. *Army Research Office*, Engineering Science Program; Materials Directorate: “Compliant Smart Materials;” \$138,000, with A.S. Douglas. 7/95 - 6/96.
15. *Army Research Laboratory*, Materials Directorate: “Adiabatic Shear Localization in BCC Metals;” \$137,100. 7/95 - 6/96.
16. *Army Research Office*, Materials Science Program: “The Direct Measurement of the Susceptibility of Penetrator Materials to Shear Localization under Pressure;” \$163,000. 6/1/95 - 5/31/98.
17. *Army Research Office*, Materials Science Program: “Novel Tungsten-Based Composites: Designer Materials for Ultra-High Rate Deformation and Failure;” \$386,824. 9/15/95 - 9/14/98.
18. *Army Research Office*, Engineering Science Program: “Arbitrary Resolution Interferometers for Pressure-Shear Recovery Experiments;” \$106,504. 7/1/95 - 6/30/96.

19. *Army Research Laboratory*, Materials Directorate: “Dynamic Behavior and Dynamic Failure of Metal-Matrix Composites;” \$75,112. 5/96 - 12/31/96.
20. *Army Research Laboratory*, Materials Directorate: “Smart Materials;” \$75,000, with A.S. Douglas. 5/96 - 12/31/96.
21. *National Science Foundation*, Fluid, Particulate & Hydraulic Systems Program: “A Controlled-Strain Rheometer with Rheo-Optical Capabilities to Study the Dynamics of Complex Fluids;” \$92,700, with D. Wirtz & J. van Zanten. 5/1/96-4/30/97.
22. *Army Research Laboratory*, Weapons & Materials Directorate: “Dynamic Behavior and Dynamic Failure of Metal-Matrix Composites;” \$70,000, with K.J. Hemker. 1/1/97 - 12/31/97.
23. *Army Research Laboratory*, Weapons & Materials Directorate: “Microscale and Mesoscale Characterization of Compliant Smart Composites;” \$67,000, with A.S. Douglas. 1/1/97 - 12/31/97.
24. *Army Research Laboratory*, Weapons & Materials Directorate: “Dynamic Behavior and Dynamic Failure of Metal-Matrix Composites;” \$78,000, with K.J. Hemker. 1/1/98 - 12/31/98.
25. *Sandia National Laboratories*: “Pressure-Shear Plate Impact Experiments;” \$50,000. 5/97-7/98.
26. *Army Research Laboratory*, Weapons & Materials Directorate: “Dynamic Behavior and Dynamic Failure of Metal-Matrix Composites;” \$120,000. 1/1/99 – 12/31/99.
27. *Army Research Laboratory*, Weapons & Materials Directorate: “Dynamic void growth and coalescence in ductile metals;” \$48,000. 1/1/99 – 12/31/99.
28. *Army Research Laboratory*, Weapons & Materials Directorate: “High-Strain-Rate Behavior and Dynamic Failure of Metal-Matrix Composites;” \$107,000. 1/1/00 – 12/31/00.
29. *Army Research Laboratory*, Weapons & Materials Directorate: “Dynamic void growth and coalescence in ductile metals;” \$55,000. 1/1/00 – 12/31/00.
30. *National Science Foundation*, Mechanics & Materials: “SGER: Constitutive Functions for Active Compliant Materials,” with A.S. Douglas; \$64,867. 9/1/00-8/31/01.
31. *Army Research Office*: “Novel Techniques for Ultra-High-Rate Deformations of Materials.” \$20,000 (STIR program). 5/1/01-10/31/01.
32. *Army Research Office*: “Center for Advanced Metallic and Ceramic Systems: Dynamic Behavior of Non-Crystalline and Crystalline Metallic Systems.” PI: Ramesh, co-Investigators Molinari, Ma, Hufnagel, Weihs, Hemker. \$3,000,000. 1/1/01-12/31/05.
33. *Army Research Office*: “Center for Advanced Metallic and Ceramic Systems: High-Strain-Rate Behavior And Dynamic Failure Of Armor Ceramics.” PI: Ramesh, co-PI Molinari. \$971,538 (subcontract from Rutgers). 1/1/01-12/31/05.
34. *Office of Naval Research*: “Nanocomposite Ceramics for Lightweight Armored Vehicles.” A CAMCS proposal in collaboration with Bernard Kear of Rutgers. \$160,000 (subcontract from Rutgers). 11/5/01-10/31/03.
35. *Office of Naval Research*: “High Rate Properties of Human Tissues.” Subcontract from Applied Physics Laboratory. \$54,249. 7/1/03 -6/30/04.
36. *Office of Naval Research*: “High Rate Properties of Brain Tissue.” Subcontract from Applied Physics Laboratory. \$53,203. 7/1/05 -6/30/06.
37. *National Science Foundation*, Nanobiomechanics: “The Mechanics of Transcription Regulation,” with Sean Sun. ~\$180,000. 9/1/2005 – 9/30/2007.
38. *Office of Naval Research*: “Simulations for Blast Induced Traumatic Brain Injury.” Subcontract from APL. \$83,492. 7/1/05 – 9/30/06.
39. *Institute for Nanobiotechnology (INBT) at Johns Hopkins*: “Nanoparticle transport and fate in the aquatic environment; filter-feeding oysters as a target organism” - Thaddeus Graczyk, Kai Loon Chen, Ken Livi, KT Ramesh, Denis Wirtz. \$25k, 2008-2009.

40. *Missile Defense Agency, MSTAR Program*: “Hypervelocity Impact Fragmentation for Intercept Optical Signatures,” with P.K. Swaminathan (APL). \$595,397, 09/30/2005 – 12/31/2010.
41. *Missile Defense Agency, MSTAR Program*: “Parameterized Fragmentation Models for Intercept Optical Signatures,” with P.K. Swaminathan (APL). \$600,000. 7/1/2008 – 6/30/2011.
42. *National Aeronautics and Space Administration, Planetary Geology and Geophysics*: “Advances in Dynamic Failure: Applications to Planetary Impact Problems” – PI: K.T. Ramesh (JHU Mechanical Engineering), co-PI Olivier Barnouin-Jha (JHU Applied Physics Lab). \$270,000. 01/01/2009 – 1/31/2012.
43. *Lawrence Livermore National Laboratory*: “High Strain Rate Experiments to Study Twinning in Tantalum.” \$451,225. 01/01/10-09/30/13.
44. *Army Research Laboratory*: “Center for Advanced Metallic and Ceramic Systems II: Dynamic Behavior of Non-Crystalline and Nanocrystalline Metallic Systems.” PI: Ramesh, co-Investigators Ma, Hufnagel, Graham-Brady. \$4,787,388. 3/7/2006-4/11/2014.
45. *Army Research Laboratory*: “Center for Advanced Metallic and Ceramic Systems II: Dynamic Behavior and Optimization of Advanced Armor Ceramics.” PI: Ramesh, co-Investigator Graham-Brady. \$1,814,087 (subcontract from Rutgers). 3/7/2006-3/6/2015.
46. *National Science Foundation*: “IGERT: Modeling Complex Systems – The Scientific Basis of Coupling Multi-Physics Models at Different Scales” PI: Graham-Brady, Co-Investigators – 20 JHU ME Faculty. \$3,000,000. 8/1/2008 – 7/31/2013.
47. *National Science Foundation, DMR*: “Materials World Network: Experiments in Discrete Twinning Dynamics.” \$390,000. 08/01/10-07/31/13. NCE 07/13/2014.
48. *Missile Defense Agency*: “Parameterized Fragmentation Models for Intercept Optical Signatures.” \$597,869. 08/03/09-08/2/13. NCE 8/02/2014.
49. *US Army Medical Research and Material Command (USAMRMC)*: “Computational Model of the Eye for Primary and Secondary Blast Trauma.” With Vicky Nguyen. \$998,356. 09/28/10-09/27/14.
50. *DARPA*: “Surviving Contact: A Revolutionary Approach to Controlling Energy Pathways.” \$750,943. 07/01/11-06/30/13. NCE 12/31/13.
51. *NASA*: “Dynamic Failure Mechanics Applied to Disruption and Cratering Problems (ROSES2011).” \$270,000. 08/15/12-08/14/15.
52. *DTRA*: “Collateral Building Damage Due to Nuclear-Induced Airblast.” Co-PIs: Ramesh, Daphalapurkar and Graham-Brady (subcontract from Protection Engineering consultants) \$508,302. 12/06/13-12/05/16.
53. *NIH*: “In Vivo Measurement of Brain Biomechanics.” (Subcontract from Washington University at St. Louis, PI Bayly). \$321,092. 02/01/13-11/30/17.
54. *NASA*: “Volatiles, Regolith and Thermal Investigations Consortium for Exploration and Science (VORTICES) (SSERVI) PI: Bussey, Co-Investigator Ramesh (subcontract from APL) \$600,000. 02/15/14-01/31/19.
55. *NNMI*: Lightweight Innovations for Tomorrow (LIFT). Lightweight And Modern Metals Manufacturing Innovation (LM3I) American Lightweight Materials Manufacturing Innovation Institute (ALMMII) under “Lightweight And Modern Metals Manufacturing Innovation (LM3I)” Program proposal led by Alan Taub of Michigan. \$30,000,000. HEMI/JHU is a University partner in blast and ballistics. Current.
56. *DTRA*: “In situ visualization and mesoscale modeling of dynamic fracture in geological and manufactured materials.” PI T.C. Hufnagel. \$1,580,000. 2015-2020 (3+2).
57. *Army Research Laboratory*: “Materials in Extreme Dynamic Environments (MEDE) Collaborative Research Alliance.” Recipient Program Manager: Ramesh. (Consortium members: Johns Hopkins University, Caltech, Rutgers and University of Delaware) ~\$92,000,000. 4/16/2012-4/15/2022.

TEACHING

I enjoy teaching at both the graduate and undergraduate levels, and received the William H. Huggins Award for Excellence in Teaching both undergraduates and graduates in 1995.

1.0 New courses developed at Johns Hopkins:

1.1 530.748 Stress Waves, Shock and Impact

This graduate course provides a physical basis, as well as the mathematical techniques, for problems involving stress wave propagation in solids. The primary topics covered are: plane waves in unbounded elastic media, spherical waves, the theory of elastic waveguides, and special topics (dynamic fracture, waves in viscoelastic solids and elastic-plastic solids, shocks). Analysis of impact on materials and structures. Impact on various scales, from planetary to microscopic. Shock waves. Impact signatures in materials (time permitting).

1.2 530.414 Computer - Aided Design

This undergraduate course integrates the concepts developed in Mechanics of Materials and Machine Design with the use of the computer as a design tool. The topics covered include: Introduction to computer-aided design using the SDRC IDEAS package; object modeling, system assembly; mechanism solution procedures; computer-aided drafting and dimensioning; and linear finite element analysis using the IDEAS software.

1.3 530.602 Mechanics of Solids

This graduate course follows a course in Continuum Mechanics (which is a prerequisite), and provides the first year graduate student with a sufficiently firm basis in the mechanics of solids to commence research activity. Topics covered include: linear elasticity, plasticity, viscoelasticity, and linear elastic fracture mechanics. Special topics covered are viscoplasticity and dislocation dynamics.

1.4 530.750 Rheology

The theory of rheology is developed from a continuum viewpoint, with the intent of integrating continuum constitutive formulations with phenomenological concepts derived from the microphysics. The rheological behavior of polymers, low-molecular weight synthetic fluids, and amorphous metals. Wave propagation in these materials. Rheometry. Applications to polymer melt processing, lubrication, and high-temperature manufacturing processes for metals.

1.5 530.611 Advanced Experimental Techniques

Developed together with Profs. Sharpe & Katz, this course was intended to provide cutting-edge laboratory experiences for graduate students in the Department in both the solids and thermo-fluids areas.

1.6 530.201 Statics & Mechanics

Set up the laboratory component of this new course. The course represents a laboratory-oriented combination of traditional statics and one-dimensional mechanics of materials (I also teach the follow-on course, Mechanics-Based Design).

1.7 530.215 Mechanics-Based Design

This course attempts to teach the mechanics of materials through design-oriented problems, and also integrates a substantial part of traditional mechanical component design. Makes extensive use of newly developed experiments and existing laboratory equipment, and includes a design project.

1.8 535.411 Tribology: Friction and Wear

This is an entirely internet-based course (Hopkins' first in Engineering) with no in-class lectures but with several laboratory exercises. After some simple preliminaries in contact mechanics, the different forms of friction and wear, conceptual and quantitative models for describing these phenomena. Hydrodynamic and elastohydrodynamic lubrication, including film thickness and surface roughness effects. Applications considered include designing for wear life and frictional performance, the tribological design of coatings and surface treatments, and case studies in industrial tribology.

1.9 530.754 Viscoelasticity

The linear theory of viscoelasticity is considered. The basic mathematical tools (e.g. Laplace transforms) are first introduced, and then integrated into a continuum mechanics-oriented description of the response of viscoelastic materials. Stress relaxation and creep phenomena are described; the complex moduli are developed, with specific reference to the physical mechanisms associated with the frequency dependence of the properties. Techniques for measurement of linear viscoelastic properties are discussed. Wave propagation in viscoelastic solids is examined. A number of initial-boundary value problems are solved to illustrate the theory.

1.10 530.757 Nanomechanics

A research-level course examining the mechanics of nanoscale assemblies and microscale structures used for investigating nanoscale phenomena. Applications in scanning probe systems, materials and biology are of interest.

2.0 Existing Courses that were Revised

- 530.313 Mechanics of Materials
- 530.314 Machine Design
- 530.601 Continuum Mechanics
- 530.642 Plasticity
- 530.347 Mechanical Systems Laboratory

3.0 Courses Taught:

Fall 1988	530.748 Stress Waves in Solids (Graduate)
Spring 1989	530.314 Machine Design (Undergraduate)
Fall 1989	530.414 Computer-Aided Design (Undergraduate)
Spring 1990	530.314 Machine Design (Undergraduate) 530.602 Mechanics of Solids (Graduate)
Fall 1990	530.748 Stress Waves in Solids (Graduate) 530.414 Computer-Aided Design (Undergraduate)
Spring 1991	530.602 Mechanics of Solids (Graduate)
Fall 1991	530.313 Mechanics of Materials (Undergraduate) 530.414 Computer-Aided Design (Undergraduate)
Spring 1992	530.602 Mechanics of Solids (Graduate) 530.642 Plasticity (Graduate, 1/3)
Fall 1992	530.601 Continuum Mechanics (Graduate)

	530.748 Stress Waves in Solids (Graduate) 530.611 Advanced Experimental Techniques (Graduate, 1/3)
Spring 1993	530.750 Rheology (Graduate)
Fall 1993	530.601 Continuum Mechanics (Graduate) 530.347 Mechanical Systems Laboratory (Undergraduate)
Spring 1994	530.642 Plasticity (Graduate)
Fall 1994	530.601 Continuum Mechanics (Graduate) 530.347 Mechanical Systems Laboratory (Undergraduate)
Spring 1995	530.748 Stress Waves in Solids (Graduate)
Fall 1995	530.601 Continuum Mechanics (Graduate) 530.347 Mechanical Systems Laboratory (Undergraduate) 530.201 Statics & Mechanics (Labs only, Undergraduate)
Spring 1996	No courses (ASME Conference)
Fall 1996	530.601 Continuum Mechanics (Graduate) 530.315 Mechanics-Based Design (Undergraduate) 530.347 Mechanical Systems Laboratory (Undergraduate, with Sharpe)
Spring 1997	530.602 Mechanics of Solids
Fall 1997	530.601 Continuum Mechanics (Graduate, with Douglas) 530.755 Readings at the Mechanics & Materials Interface (Graduate, w. Hemker) 530.748 Readings in Stress Waves (Graduate)
Spring 1998	530.602 Mechanics of Solids (Graduate) 530.315 Mechanics-Based Design (Undergraduate) 535.411 Tribology: Friction & Wear (PTE Graduate)
Fall 1998	530.754 Viscoelasticity (Graduate)
Spring 1999	530.602 Mechanics of Solids (Graduate) 530.215 Mechanics-Based Design (Undergraduate)
Fall 1999	530.601 Continuum Mechanics
Spring 2000	530.602 Mechanics of Solids (Graduate)
Fall 2000	530.601 Continuum Mechanics (Graduate)
Spring 2001	530.602 Mechanics of Solids (Graduate)
Fall 2001	None.
Spring 2002	530.602 Mechanics of Solids (Graduate)
Fall 2003	530.757 Nanomechanics
Spring 2004	530.602 Mechanics of Solids (Graduate) 530.215 Mechanics-Based Design (Undergraduate)
Fall 2004	530.748 Stress Waves, Impact and Shocks (Graduate) 530.759 Research Seminar in Plasticity and Failure (Graduate)
Spring 2005	530.602 Mechanics of Solids (Graduate) 530.215 Mechanics-Based Design (Undergraduate) 530.759 Research Seminar in Plasticity and Failure (Graduate)
Fall 2005	530.759 Research Seminar in Plasticity and Failure (Graduate)
Spring 2006	530.757 Nanomechanics (Graduate) 530.215 Mechanics-Based Design (Undergraduate)

	530.759 Research Seminar in Plasticity and Failure (Graduate)
Fall 2006	530.601 Continuum Mechanics (Graduate) 530.748 Stress Waves, Shocks and Impact (Graduate) 530.759 Research Seminar in Plasticity & Failure (Graduate)
Spring 2007	530.215 Mechanics-Based Design (~45 UG students) 530.759 Research Seminar in Plasticity & Failure (Graduate)
Fall 2007	530.759 Research Seminar in Plasticity & Failure (Graduate)
Spring 2008	530.525 Independent Research (Undergraduate) 530.602 Mechanics of Solids (Graduate) 530.642 Plasticity (Graduate) 530.759 Research Seminar in Plasticity & Failure (Graduate)
Fall 2008	530.732 Fracture of Materials (Graduate) 530.759 Research Seminar in Plasticity & Failure (Graduate) 560.700 IGERT, co-taught with several other faculty members
Spring 2009	530.405 Mechanics of Solids & Structures (Undergraduate) 530.606 Mechanics of Solids & Materials (Graduate)
Fall 2009	530.759 Research Seminar in Plasticity & Failure (Graduate)
Spring 2010	530.757 Mechanics of Nanomaterials (Graduate) 530.759 Research Seminar in Plasticity & Failure (Graduate) 535.411 Friction & Wear (EP Graduate)
Fall 2010	530.352 Materials Selection (Undergraduate) 530.605 Mechanics of Solids & Materials (Graduate) 530.759 Research Seminar in Plasticity & Failure (Graduate)
Spring 2011	530.748 Stress Waves, Shock and Impact (Graduate) 530.759 Research Seminar in Plasticity & Failure (Graduate)
Fall 2011	On sabbatical at NASA Goddard
Spring 2012	530.759 Research Seminar in Plasticity & Failure (Graduate)
Fall 2012	530.759 Research Seminar in Plasticity & Failure (Graduate)
Spring 2013	530.759 Research Seminar in Plasticity & Failure (Graduate)
Fall 2013	530.759 Research Seminar in Plasticity & Failure (Graduate)
Fall 2014	530.759 Research Seminar in Plasticity & Failure (Graduate)
Spring 2014	530.748 Waves, Impacts and Shocks (Graduate)
Spring 2015	530.732 Fracture Mechanics (Graduate)
Spring 2016	530.215 Mechanics-Based Design (Undergraduate)

4.0 Supervision of Graduate Students, Postdocs and Visitors

4.1 Doctoral Students:

No	Student	Research Topic	Current Position	Year
1	R. Feng	Fundamental Studies in Elastohydrodynamic Lubrication	University of Nebraska – Lincoln	1992

2	M. da Silva	The Influence of Porosity on the Localization of Shearing Deformations	Exponent	1994
3	S. Yadav	Dynamic Deformations in Metal-Matrix & Tungsten-Based Composites	Bank of America Securities	1996
4	Y. Zhang	Lubricant Rheology: Experiments and Molecular Modeling	BGR Corp	1997
5	D.R. Chichili	Fundamental Studies in Adiabatic Shear Localization	PepsiCo	1997
6	A.M. Lennon	High-Rate Deformations and Adiabatic Shear Bands in BCC Metals	Applied Physics Laboratory (Johns Hopkins)	1998
7	S. Bilyk	The Interaction of Finite Deformations and Large Electric Currents in Metals	Army Research Laboratory	2006 (did not finish)
8	S. Marra	Biomimetics and Active Materials	Johns Hopkins University	2000
9	D. Jia	Mechanical Behavior of Nanostructured Iron	Waveband Corp.	2001
10	X. Wu	Dynamic Nucleation, Growth and Coalescence of Voids in Metals	University of Arizona	2002
11	M. Glynn	Thermal Barrier Coatings	Lincoln Labs, MIT	2003
12	H. Zhang	Fabrication, high strain rate constitutive behavior and dynamic failure of MMCs	Schlumberger	2005
13	B.E. Schuster	Microcompression of Nanostructured and Amorphous Materials	U.S. Army Research Laboratory, Aberdeen, MD	2008
14	B. Paliwal	Dynamic Failure of Brittle Materials	Georgia Tech - Metz	2008
15	R. Kraft	Computational Simulations of Brittle Failure	U.S. Army Research Laboratory, Aberdeen, MD	2008
16	S. Misra	Biomechanical Fidelity in Robotic Surgery	University of Twente	2009
17	J. Meulbroek	Hypervelocity Impact Fragmentation	University of Wisconsin-Platteville	2010
18	E. Huskins	Behavior of Nanostructured Aluminum	US Naval Academy	2012
19	R. Wright	Dynamic Injury in the Human Brain at the Axonal Scale	Robert Morris University	2012
20	C. Williams	Experimental Studies of Fragmentation	Army Research Laboratory	2012
21	G. Hu	Failure Mechanisms of Ceramics	Becton-Dickinson	2012
22	C. Byer	Deformation Mechanisms of Magnesium	Institute for Defense Analyses	2013
23	A. Tonge	A modeling framework for dynamic	Army Research Laboratory	2014

failure of brittle materials				
24	A. Fournier	Mechanics of Neural Axons	PEO Soldier (US Army)	2014
25	J. Wilkerson	Multiscale mechanisms in extreme environments	University of Texas, San Antonio	2014
26	N. Dixit	Deformation Twinning Dynamics	Exponent, Inc.	2015
27	F. Madouh	Traumatic Brain Injury	Johns Hopkins University	Current
28	C. El Mir	Regolith generation on asteroids	Johns Hopkins University	Current
29	V. Kannan	Plastic Deformation/Failure of Magnesium and Magnesium Alloys under Very High Strain Rates	Johns Hopkins University	Current
30	D. Mallik	Laser-Shock Experiments and Equations of State	Johns Hopkins University	Current
31	M. Zhao	Pressure Shear Plate Impact on Mg	Johns Hopkins University	Current
32	A. Dagro	Network Mechanics in Brain Injury	Johns Hopkins University	Current
33	K. Leonard	Amorphization in Ceramics	Johns Hopkins University	Current
34	X. Sun	Dynamic Behavior of Granular Materials	Johns Hopkins University	Current
35	Tracy Ling	Indirect Traumatic Optic Neuropathy	Johns Hopkins University	Current
36	Jason Parker	The Dynamics of Composites	Johns Hopkins University	Current
37	Jeremy Rosen	A Mouse Model for Traumatic Brain Injury	Johns Hopkins University	Current

4.2 Master's Degrees Awarded:

No.	Student	Research Topic	CURRENT POSITION	Year
1	R. Feng	The Dynamic Compressibility of Elastohydrodynamic Lubricants	Univ. of Nebraska	1991
2	R.S. Coates	The Rate-Dependent Deformation of a Tungsten Alloy	Army Research Laboratory	1991
3	M. da Silva	The Dynamic Deformation of a Titanium Alloy: Effects of Porosity and Microstructure	Coventor	1992
4	J. A. Davis	The Development of a Recovery Technique for Pressure-Shear Plate Impact Experiments	NIST	1993
5	S. Yadav	The Dynamic Behavior of a 6061-T6 Al/Al ₂ O ₃ Metal-Matrix Composite	Fermilab	1994
6	Y. Zhang	EHD Lubricant Behavior at Moderate Pressures and High Shear Rates	Quinta Corp.	1994
7	Andrew M. Lennon	Rate-Dependent Mechanical Properties of Pure Polycrystalline Tungsten	Applied Physics Laboratory	1996
8	J. Samek	Non-thesis Master's	U.S. Army	1996
9	C.A. Collins	Non-thesis Master's	Sandia National Labs	1997

10	S.P. Marra	Piezoelectric Composites	Assoc. Teaching Prof., JHU	1997
11	E. Rapacki	Impact-induced Damage in Ceramics:	Army Research Laboratory	1998
12	J. Tanzman	Biomechanics	Applied Physics Laboratory	1999
13	M. Stratton	Impact Damage in Aerospace Composites	U.S. Marine Corps	2001
14	Y. Xing	Mechanical Influences on Chondrocytes	PRC	2002
15	H. Saraf	DNA-Protein Interactions	Deloitte & Touche	2004
16	H. Silva	Impact problems	Michigan	2005
17	M. Pirtini	High-Rate Properties of Human Brain Tissues	Princeton University	2007
18	P. McPhee	Wave Propagation in the Brain	KEMA	2007
19	R. Yatnalkar	Ocular Blast Injury	Becton-Dickinson	2012
20	T. Nguyen	Crystal Plasticity of BCC Metals	University of Texas at San Antonio	2013
21	J. Tobon	Plasticity and Failure	Northrop Grumman	2013
22	K. Parsons	Impact Injury of the Eye	Johns Hopkins University	2014
23	A Robinson	Mechanical behavior of granular BC	Lawrence Livermore Lab	2016

4.3 Postdoctoral Scholars

1. Dr. Ji-Bin Yang, now at Rockwell Dynamics
2. Dr. Yulong Li, Professor, Northwestern Polytechnical University, China
3. Dr. Li-Qian Xing, Washington University in St. Louis
4. Dr. Qiuming Wei, Professor, UNC-Charlotte
5. Dr. Fenghua Zhou, Professor, Ningbo University, China
6. Dr. Tong (Tonia) Jiao, Research Engineer, Brown University
7. Dr. Haitao Zhang, Schlumberger, Texas.
8. Dr. Hong Wang, Oakridge National Laboratory
9. Dr. Shailendra Joshi, Associate Professor, National University of Singapore (NUS)
10. Dr. Buyang Cao, at Caterpillar, NY
11. Dr. Cang Fan, University of Tennessee, Knoxville
12. Dr. George Zhang, consulting in Boston, MA
13. Dr. Bin Li, Assistant Professor at University of Nevada-Reno
14. Dr. Brandon McWilliams, Army Research Laboratory
15. Dr. Krishna Jonnalagadda, Assistant Professor at Indian Institute of Technology, Bombay
16. Dr. Swapnil Patil, General Electric
17. Dr. Jamie Kimberley, Assistant Professor at New Mexico Institute of Mining and Technology
18. Dr. Nitin Daphalapurkar, Assistant Research Professor at Johns Hopkins University
19. Dr. Changqiang Chen, Research Scientist at University of Illinois Urbana

20. Dr. Leslie Lamberson, Assistant Professor at Drexel University
21. Dr. Eswar Prasad Korimilli, Assistant Professor at Mahindra École Centrale, Hyderabad, India
22. Dr. Dharendra Kubair, postdoc in Civil Engineering, Johns Hopkins University
23. Dr. Angela Stickle, Scientist, Applied Physics Lab
24. Dr. Tuan Hoang, at Vietnamese University
25. Dr. Sarah Bentil, Assistant Professor, Ohio State
26. Dr. James Hogan, Assistant Professor, University of Alberta, CA
27. Dr. Lukasz Farbaniec, postdoc at Imperial College, UK
28. Dr. Ravi Sastri, Assistant Professor, IIT Gandhinagar
29. Dr. Shailesh Ganpule, Assistant Professor, IIT Roorkee
30. Dr. Kavan Hazeli, Assistant Professor, University of Alabama at Huntsville
31. Dr. Hosein Motamedi, current postdoc
32. Two others being hired.

4.5 Supervision of Undergraduate Research

1. Gauri Gavankar, a Physics sophomore, developed data reduction procedures and provided general assistance.
2. Yuri Achille, a BioMed freshman, worked on specimen preparation, data reduction, and microstructural evaluation.
3. Alexander Motamed, a Mech. Eng. senior, worked on the compressibility of EHD lubricants and on titanium alloys. He is now an engineer with Westinghouse.
4. Stephen Chong, a Mech. Eng. senior, worked on the quasistatic deformation of titanium alloys. He is now completing his graduate studies at MIT.
5. Heather Riordan, a Mech. Eng. junior, developed data reduction procedures and provided general lab assistance.
6. Richard Millhiser, a Mech. Eng. senior, worked on data reduction, microscopy, and microstructural evaluation.
7. Laurence Chun, a Mech. Eng. senior, worked on the dynamic behavior of titanium and tantalum.
8. Jack Buchanan, a Mech. Eng. senior, worked on the dynamic behavior of tantalum and provided laboratory support. He is now a BME graduate student at Duke.
9. Louis Jauvtis, a Mech. Eng. freshman, provided general laboratory support. I note that his term GPA improved dramatically while he worked in the laboratory.
10. Naida Zecevic, a sophomore at Western Maryland, worked on specimen preparation and provided general assistance.
11. Sudarshan Narasimhan, a Mech. Eng. senior, developed a new experimental technique for dynamic radial measurements during compression. A paper on the technique has been published.
12. Kevin Capinpin, a Mech. Eng. junior, provided laboratory support with the pressure-shear plate impact facility.
13. John Garmon, a Mech. Eng. senior, developed a technique for the optical measurement of dynamic axial strains.
14. Charles Bartisch, a BME senior, provided general research assistance in the lab, especially in specimen preparation.
15. Chris Betsher, a Mech. Eng. senior, provided general assistance in the laboratory during the summer.
16. Jay Dunning, a Gilman High School senior on his way to Princeton as an engineering freshman, spent a few weeks with me in May as part of his Senior Encounter project. I was impressed.

17. Robert Mills is a BME undergrad who is currently working on the mechanical properties of plant tissue.
18. Isaac Weingrod, a Mech. Eng. junior, worked on specimen preparation, microstructural analysis, and actuator design.
19. Sanae Kubota, a Mech. Eng. junior, provides research assistance in the lab, especially in specimen preparation.
20. Chris Gemmiti, a Biomedical Engineer, worked on the design and development of a biaxial testing device for active materials.
21. Kristy Hsiao, a Mech. Eng. Senior, spent the spring in LAMB working on imaging and motion control. She had the highest GPA in Mechanical Engineering and went on to culinary school.
22. Keith Carlton, a Mech. Eng. Junior, provided assistance in LIDAR and also began a research project (joint with Prosperetti) on fractoluminescence in ice.
23. Serena Leung, a Mech. Eng. Senior, provided general assistance in LIDAR with specimen preparation and some machining.
24. Alastair Valentine, a Mech. Eng. Freshman, provided assistance with specimen preparation in LAMB.
25. Wade Johannesen, a BME Senior, spent one fall in LAMB working on the measurement of the viscoelastic properties of soft tissues and AlloDerm.
26. Sam Feldman, a high school senior, spent a summer working on high-speed photography.
27. Sam Martin, ME Senior, worked on the high-rate deformations of high hard steel.
28. Gautam Jadhav, ME junior, spent an academic year working on the dynamic failure of ceramics.
29. Philip Tsang, BME, worked with Carmelita Frondoza and myself on chondrocytes.
30. Tristan Flanzer, ME, provided general assistance in the laboratory.
31. Omar Irizarry, ME, provided assistance with optics and photography.
32. Soohong Park, ME, provided general assistance in the laboratory.
33. Rebeca Mercado, BME, worked on penetration of needles into rubber
34. Sairam Subramaniam, ME, provided general assistance in the laboratory.
35. Laura Manofsky, ME, working on brain impact experiments and simulations
36. Sam Olesky, ME, working on the dynamic failure of glass.
37. James Wu, BME, working on the penetration of needles into hyperelastic membranes
38. Diana Kim, BME, working on the low-frequency response of brain tissue
39. Chris Kovalchick, ME, working on simulations of impact
40. Alek Koenig, ME, optics, photography and tungsten-glass composites.
41. Kyle Azevedo, ME, nanomagnesium
42. Patrick Brandon, ME, nano-micro aluminum composites
43. Scott Decker, BME, brain tissue properties
44. Adam Friedman, ME, general lab assistance
45. Brian Woodworth, ME, general lab assistance
46. Omar Almagri, ME, magnesium behavior
47. Douglas Karlsberg, ME, nanoaluminum
48. Taig Rajpal, ME, ceramics and glasses

49. Ben Pressman, ME, layered structures
50. Debjoy Mallick, BME, computations of microstructures
51. Alejandro De Simone, ME, general lab assistance
52. Amy Dagro, BME, design of biomechanical devices
53. Christian Murphy, ME, general lab assistance
54. Alex Strachan, ME, computational research assistant
55. Logan Shannahan, ME, dynamic behavior of magnesium
56. Dan Cadel, ME, shock tube design
57. Albert Chen, ME, design of biomechanical devices
58. Chris Price, ME, mechanical design
59. Shing Shin Cheng, ME, high rate experiments and computational biomechanics
60. Noah Dennis, ME, mechanical design and high rate experiments
61. Aman Shah, ME, mechanical design and experimental biomechanics
62. Jack Riley, ME, mechanical design and high rate experiments
63. Nicole Cade-Ferreira, ME, high rate experiments
64. Andrew Cerruzi, ME, impact experiments on magnesium
65. Joseph Hajj, ME, high strain rate fragmentation on brittle materials
66. Dmitriy Katz, ME, impact experiments and fragmentation on ice
67. William Wagers, ME, mechanical design, high rate experiments on geological materials
68. Geordan Gutow, ME, impact on ceramics
69. Daniel Tabas, ME, spall of metals
70. Erez Krinsky, ME, fragmentation of ceramics
71. Raph Santore, ME, rock materials
72. Frank Waggoner, ME, eye injury
73. Josh Samba, Morgan State undergraduate, laser shock experiments
74. Seth Izen, Maryland Institute College of Art undergraduate, animation of fragmentation

4.6 Supervision of High School Research

1. Danh Nguyen, Baltimore Polytechnic HS, high strain rate behavior of 2139 aluminum
2. Meng-meng Wang, Garrison Forest HS, tissue mechanics
3. Wesley Baire, Gilman HS, fragmentation of basalt, optical ray tracing
4. Ty Green, Gilman HS, ceramic behavior
5. Jay Pavanal, Mt. St. Joseph HS, impact mechanics
6. Lane Easterling, Baltimore Polytechnic HS, ice fragmentation and evolution in Saturn's rings
7. Kevin Peters, Gilman HS, now an undergrad at JHU
8. Jeffrey Rodgers, Mt. St. Joseph's HS, failure of polymers for helmets

9. Alison Baratta, Garrison Forest HS, optical tweezers in network mechanics
10. Michael Stromberg, Mt. St. Joseph's HS, mechanical properties of materials
11. Shawn Abraham, REAP fellow, Eleanor Roosevelt HS, dental materials
12. Anna Pizzano, REAP fellow, Elizabeth Seton HS, mechanics of dental materials

4.7 Supervision of Research Scientists & Visitors

1. Prof. Yulong Li, Professor, Northwestern Polytechnical University, China
2. Prof. Qiuming Wei, Professor, UNC-Charlotte
3. Prof. Fenghua Zhou, Professor, Ningbo University, China
4. Prof. Fenglei Huang, Professor, Beijing Institute of Technology, China
5. Prof. Alain Molinari, Professor, Universite de Metz, France
6. Prof. Shinji Ogihara, Professor, Tokyo University of Science in Japan
7. Prof. Kosta Volokh, Professor, Technion
8. Prof. Yeong Sung Suh, Professor, Hannam University, South Korea
9. Dr. S. Sivaprasad, Visiting Scholar from National Metallurgical Laboratory, India
10. Dr. Tao Suo, Visiting Professor, NWPU, China
11. Prof. Rebecca Brannon, Professor, University of Utah
12. Dr. Zubaer Husain, now Assistant Professor, University of Delaware
13. Dr. Lijo Panghat, MD, Wilmer Eye Institute
14. Dr. Tim W. Wright, Adjunct Research Scientist
15. Dr. Jim W. McCauley, Adjunct Research Scientist
16. Prof. Shailendra Joshi, Associate Professor, National University of Singapore

PROFESSIONAL SOCIETIES

American Society of Mechanical Engineers
Society of Experimental Mechanics
American Academy of Mechanics
American Association for the Advancement of Science
Society of Engineering Science (President, Board of Directors)
The Metals, Minerals and Materials Society (TMS)
The Materials Research Society
American Ceramic Society
American Society for Engineering Education
American Physical Society
Geological Society of America
American Geophysical Union

SELECTED PROFESSIONAL SERVICE

To the Scientific and Professional Communities:

- Developed Extreme Science Internships and Scholars program with Morgan State University (Baltimore, MD)
- Developed Extreme Arts Program with Maryland Institute College of Art (Baltimore, MD)
- Section Editor, Applied Mechanics Reviews, 2013-2015
- Editorial Advisory Board, Journal of Dynamic Behavior of Materials
- Editorial Board, Materials Research Letters
- Editorial Board, Strain
- Editorial Board, Frontiers of Neurology
- Member, US National Committee on Biomechanics
- National Academies Committee on Protection Materials, 2010
- Director (Region I), American Academy of Mechanics
- President, Society of Engineering Science
- Vice-President, Society of Engineering Science
- Board of Directors, Society of Engineering Science
- Various Committees, SES and SEM
- Organizing Committee, Hypervelocity Impact Society Conference, 2012
- Initiated the Mach Conference, an annual conference on multiscale materials research that attracts about 240 participants a year from across the world.
- Associate Technical Editor, Journal of Applied Mechanics, 1997 - 2003.
- Reviewer: Journal of Applied Mechanics, Journal of the Mechanics and Physics of Solids, Journal of Engineering Materials and Technology, International Journal of Plasticity, Experimental Mechanics, Mechanics of Materials, Journal of Tribology, Journal of Materials Research, Acta Materialia, Metallurgical and Materials Transactions A, Scripta Materialia, Materials Science & Engineering, Philosophical Transactions, International Journal of Fracture, International Journal of Solids and Structures, Journal of Pressure Vessel Technology, Acta Mechanica, European Journal of Mechanics, etc.
- Conducted Study Tour with Army scientists in UK and Germany.
- Reviewer, National Science Foundation (DMR, CMS, Manufacturing)
- Reviewer, U.S. Army Research Office, Office of Naval Research, CRDF, ...
- NSF Think-Tank on the Role of Experimentalists in Mechanics, 1996
- Chair, Technical Committee on Dynamic Response of Materials, ASME Applied Mechanics Division, 98-00.
- Experimental Mechanics Technical Committee, ASME Applied Mechanics Division
- Fracture and Failure Mechanics Technical Committee, ASME Applied Mechanics Division
- Joint AMD-MD Committee on Constitutive Equations, ASME Applied Mechanics and Materials Divisions
- Chair/Vice-Chair, numerous Conference Sessions (ASME, TMS, SES)
- Symposium Organizer/Co-Chair, various symposia (ASME, SES, SEM)
- Recording Secretary, ASME Applied Mechanics Division General Committee, 1992-93
- Recording Secretary, ASME Applied Mechanics Division Executive Committee, 1993-94
- Conference Organizer and Chair, 1996 ASME Mechanics & Materials Conference; held at Johns Hopkins June 12-14, 1996: an international conference (640 participants) that brought together most of the best scientists and engineers in the field.

To the Department, School and University:

- Johns Hopkins University Provost Search Committee, 2012
- Johns Hopkins University Academic Council, 2010 – 2013
- JHU Search Committee for BME Director
- Director, Hopkins Extreme Materials Institute, 2012 -
- Director, Center for Materials in Extreme Dynamic Environments, 2012 -
- Director, Center for Advanced Metallic and Ceramic Systems, 2001- 2012
- Chair, Department of Mechanical Engineering, 1999 – 2002
- Chair, Whiting School of Engineering International Affairs Advisory Committee
- Chair, EPP (Engineering for Part-time Professionals), Mechanical Engineering
- Chair, Faculty Search Committees, Mechanical Engineering
- Chair, Industrial Relations, Mechanical Engineering
- Industrial Interaction Development: Northrop Grumman, GE, Southwest Research Institute
- Most major Departmental Committees
- Advisor, ME Class of 1993, ME Class of 1998, ME Class of 2002, ME Class of 2007, ME Class of 2011
- Member, Whiting School Strategic Planning Advisory Council
- Member, Executive Committee of the Center for Non-Destructive Evaluation (CNDE) in the Whiting School
- Member, Faculty Advisory Committee to the Sheridan Libraries
- Elected by the undergraduates: Faculty Representative, Hopkins Undergraduate Academic Ethics Board
- Graduate Board Orals, Thesis Defenses (Physics, BME, ME, MS&E, EE, CE, E&PS)

COMMUNITY SERVICE

- Community and Diversity Committee, Gilman School, 2005-2015.
- Board of Directors, Montessori Society of Central Maryland, 1999-2002.
- Board of Directors, Worthington Glen Homeowners Association, Owings Mills, MD, 1995-1999.
- Soccer Coach, Owings Mills Recreational Club, Owings Mills, MD

SELECTED CONSULTING ACTIVITIES

- ArmorWorks, LLC
- DWA Corporation
- Oak Ridge Associated University
- National Transportation Safety Board
- Abstract Algorithms, Inc.
- Infinite Biomedical Technologies
- Battelle Scientific Services
- Orbital Sciences Corporation
- U.S. Armament Research, Development & Engineering Center
- Reisinger & Associates
- InfoTech Consultants
- West Publishing Company
- United Container Machinery
- AERA, Inc.
- SCI Corp.

PERSONAL

Date of Birth: March 31, 1959.

Married, with two children.