K. T. Ramesh

Alonzo G. Decker, Jr., Professor of Science & Engineering
Professor, Mechanical Eng., Materials Science & Eng., Earth & Planetary Sciences
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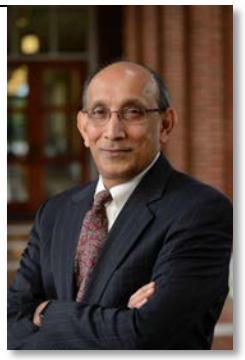

APPOINTMENTS

Adjunct Professor (sabb.)	University of Canterbury	2024-2025
Interim Co-Director	Johns Hopkins Data Science and AI Institute	2023-2024
Executive Director	Johns Hopkins AI-X Foundry	2023-2024
Senior Advisor to the President	Johns Hopkins University	2020 – 2023
Founding Director	Hopkins Extreme Materials Institute	2012 – 2023
Director	Center for Materials in Extreme Dynamic Environments	2012 – 2020
Director	Center for Advanced Metallic & Ceramic Systems	2001 – 2012
Professor (Joint)	Earth & Planetary Sciences, Johns Hopkins	Since 2015
Principal Professional Staff	Johns Hopkins Applied Physics Laboratory	Since 2011
Visiting Scientist	Planetary Geodynamics, NASA Goddard	Fall 2011
Visiting Professor	Ecole Polytechnique Federale Lausanne (EPFL)	Sep. 2008
Sabbatical Visitor	University of Cambridge	2002 – 2003
Department Chair	Mechanical Engineering, Johns Hopkins	1999 – 2002
Professor (Secondary)	Materials Science & Engineering, Johns Hopkins	Since 1997
Professor	Mechanical Engineering, Johns Hopkins	Since 1997
Associate Professor	Mechanical Engineering, Johns Hopkins	1993 – 1997
Assistant Professor	Mechanical Engineering, Johns Hopkins	1988 – 1993

HONORS AND AWARDS

Asteroid (32518) 2001OZ69 named Ktramesh	International Astronomical Union	2023
Best Paper Award	Journal of the American Ceramic Society	2022
John Rinehart Award	DYMAT Association, Europe	2021
Warner T. Koiter Medal	American Society of Mechanical Engineers (ASME)	2019
Fellow	American Association for Advancement of Science	2018
Fellow	American Academy of Mechanics	2017
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 Society of Mechanical Engineers	2001
William H. Huggins Award	Johns Hopkins University	1995

for Excellence in Teaching		
Honorary Member	Pi Tau Sigma	1994
Best Paper	ASME Tribology Division	1987

EDUCATION

B.E.	Mechanical Engineering	Bangalore University	1982
Sc. M.	Engineering	Brown University	1985
Sc. M.	Applied Mathematics	Brown University	1987
Ph. D.	Engineering	Brown University	1988
Postdoc	Mechanics of Materials	University of California, San Diego	1987-88

ARCHIVAL JOURNAL PUBLICATIONS

1. Liuchi Li, Arezoo Zare, Xinyi Xu, Velat Kilic, Kevin Hom, Laszlo Kecskes, Samuel Clarke, Kamel Fezzaa, Charlene Smith, Jason Harris, K.T. Ramesh, and Todd C. Hufnagel, "Quantitative in situ studies of dynamic fracture in a lithium metasilicate glass-ceramic using X-ray phase contrast imaging," Materials Science & Engineering A, submitted for publication.
2. J. Grant, G. Simpson, M.S. Priyadarshini, K.T. Ramesh, P. Clancy, and T.P. Weihs, "Swaged Aluminum Powder Compacts: Linking Processing Variables to Quasistatic and Dynamic Properties with Machine Learning," Acta materialia, submitted for publication.
3. Arezoo Zare, Pinkesh Malhotra, Mo-Rigen He, Justin Moreno, Matt Shaeffer, K.J. Hemker, and K.T. Ramesh, "Dynamic Failure Mechanisms and Impact Performance of Microstructurally Engineered Boron Carbide Ceramics," International Journal of Impact Engineering, submitted for publication.
4. Nicolò Maria della Ventura, Arezoo Zare, Jacob M. Diamond, Julia T. Pürstl, Florent Mignerot, Amit Sharma, Ravit Silverstein, Mason Holmes, James B. Spicer, Todd C. Hufnagel, Matthew R. Begley, Alejandro Strachan, K.T. Ramesh, and Daniel S. Gianola, "Mechanisms of spall failure in niobium subjected to high-throughput laser-driven micro-flyer impact," Acta materialia, submitted for publication.
5. S. Braroo and K.T. Ramesh, "An Anisotropic Damage Model with Defect-Crack Interactions for Heterogeneous Brittle Media under High-Rate Loading," Journal of the Mechanics and Physics of Solids, submitted for publication.
6. Justin Moreno, Matthew Shaeffer, Samuel Slingluff, Yo-Rhin Rhim, David Brown, and K.T. Ramesh, "Erosion From Hypervelocity Impacts With Simultaneously Launched Particles," International Journal of Impact Engineering, in press, 2025.
7. L. Yang, B.S. Kuwik, S. Singh, S. Ghosh, J. Moreno, R.C. Hurley, and K.T. Ramesh, "A mechanism-based constitutive model for competent rocks subjected to impact," Journal of Geophysical Research: Solid Earth, accepted for publication, 2025.
8. S. Braroo and K.T. Ramesh, "Estimation of representative length-scales for heterogeneous brittle materials subjected to high-strain-rate loading," Mechanics of Materials, in press, 2025.
9. P. Malhotra, C. Miao, J. Moreno, M. Shaeffer, N. Mitra, and K.T. Ramesh, "Modified reflective Digital Gradient Sensing applied to hypervelocity impact applications," International Journal of Impact Engineering, in press, 2025.

10. S. Braroo, X. Sun, and K.T. Ramesh, "An uncertainty quantification guided approach to modeling high-velocity impact into advanced ceramics," Mechanics of Materials, in press, 2025.
11. Jake M. Diamond and K.T. Ramesh, "Spallation of polycarbonate on nanosecond timescales," Phys. Rev. E, Vol. 111, No. 2, 025503, 2025.
12. G. Simpson, J. Grant, T.P. Weihs, and K.T. Ramesh, "Size-Dependent Fragment Shape in High-Velocity Anvil Impact of Spherical Metal Powder-Compacts," Acta materialia, 286, No. 120647, 2025.
13. Angela Stickle and the DART Team, "Dimorphos' Material Properties and Estimates of Crater Size from the DART Impact," Planetary Science Journal, Vol. 6, No. 2, pgs. 38, 2025.
14. A. Gupta, K.T. Ramesh, and Ryan Hurley. "Instabilities in Granular Media: Particle Dynamics and Stress Fluctuations," Journal of the Mechanics and Physics of Solids, 193, #105843, 2024.
15. K. Upadhyay, R. Jagani, D.G. Giovanis, A. Alshareef, A.K. Knutsen, C.L. Johnson, A. Carass, P.V. Bayly, M.D. Shields, and K.T. Ramesh, "Effect of Human Head Shape on the Risk of Traumatic Brain Injury: A Gaussian Process Regression-Based Machine Learning Approach," Military Medicine, 189 (S3), pp. 608-617, 2024.
16. Liuchi Li, V. Kilic, M. Alemohammad, K.T. Ramesh, M. Foster, and T.C. Hufnagel, "Shack-Hartmann wavefront sensing: A new approach to time-resolved measurement of the stress intensity factor during dynamic fracture," Mechanics of Materials, Vol. 194, Art. No. 105010, 2024.
17. G. Simpson, J. Moreno, M. Shaeffer, and K.T. Ramesh, "A High-Rate, Impact-Driven Biaxial Fragmentation Experiment for Ductile Materials," Mechanics of Materials, Vol. 198, Art. No. 105102, 2024.
18. Velat Kilic, Christopher S. DiMarco, Jacob M. Diamond, Pinghan Chu, K. T. Ramesh, Zhehui Wang, and Mark A. Foster, "Time Lens Photon Doppler Velocimetry (TL-PDV) for extreme measurements," Nature Communications, Vol. **15**, Article number: 7732, 2024.
19. A. Lucchetti, et al., "Fast boulder fracturing by thermal fatigue detected on stony asteroids," Nature Communications, Vol. **15**, Article number: 6206, 2024.
20. K. Upadhyay, J. Fuhg, N. Bouklas, and K.T. Ramesh, "Physics-informed Data-driven Discovery of Constitutive Models with Application to Strain-Rate-sensitive Soft Materials," Computational Mechanics, 2024. https://doi.org/10.1007/s00466-024-02497-x
21. J.M. Diamond and K.T. Ramesh, "Automated analysis of photonic Doppler velocimetry spall signals," Journal of Dynamic Behavior of Materials, in press, 2024. https://doi.org/10.1007/s40870-024-00427-9
22. Aaron S. Baumgarten, Justin Moreno, Brett Kuwik, Sohanjit Ghosh, Ryan Hurley, K.T. Ramesh, "A predictive model for fluid-saturated, brittle granular materials during high-velocity impact events," Journal of the Mechanics and Physics of Solids, 187, #105644, 2024.
23. Liuchi Li, J. Rao, T. Hufnagel, and K.T. Ramesh, "Meso-scale size effects of material heterogeneities on crack propagation in brittle solids: Perspectives from phase-field simulations," International Journal of Solids and Structures, 296, # 112795, 2024.
24. S.E. Prameela, C.C. Walker, C.S. DiMarco, D.D. Mallick, X. Sun, S. Hernandez, T. Sasaki, J.W. Wilkerson, K.T. Ramesh, G.M. Pharr, and T.P. Weihs, "High-throughput quantification of quasistatic, dynamic and spall strength of materials across 10 orders of strain rates," PNAS Nexus, Vol. 3, No. 5, pg. 148, 2024.

25. C. Bradfield, L. Voo, A. Bhaduri, and K.T. Ramesh, "Validation of a Computational Biomechanical Mouse Brain Model for Rotational Head Acceleration," Biomechanics and Modeling in Mechanobiology, 2024. https://doi.org/10.1007/s10237-024-01843-5
26. A. Gupta, K.T. Ramesh, and R.C. Hurley, "An Inclusion Model for Predicting Granular Elasticity Incorporating Force Chain Mechanics," Granular Matter, Vol. 26, No. 2, pp. 26-40, 2024.
27. Nancy L. Chabot and the DART Team, "Achievement of the Planetary Defense Investigations of the Double Asteroid Redirection Test (DART) Mission," Planetary Science Journal, pp. 5:49, February 2024. https://doi.org/10.3847/PSJ/ad16e6
28. C. Bradfield, L. Voo, D. Drewry, V. Koliatsos, and K.T. Ramesh, "Dynamic Strain Fields of the Mouse Brain During Rotation," Biomechanics and Modeling in Mechanobiology, 2023. DOI:10.1007/s10237-023-01781-8.
29. YunHo Kim, Minju Kang, Gary Simpson, Matthew Shaeffer, Justin Moreno, Daniel Magagnosc, L. J. Kecskes, J. T. Lloyd, and K. T. Ramesh, "Anisotropic debris cloud formation after hypervelocity impact into rolled magnesium alloy plates," International Journal of Impact Engineering, Vol. 182, Art. 104754, 2023.
30. G. Simpson, J. Moreno, M. Shaeffer, and K.T. Ramesh, "First Contact: Fine Structure of the Impact Flash and Ejecta during Hypervelocity Impact," Proceedings of the National Academy of Sciences Nexus, Vol. 2, Issue 7, pgad214, 2023. https://doi.org/10.1093/pnasnexus/pgad214.
31. J.W. McCauley and K.T. Ramesh, "Institutional and technical history of requirements-based strategic armor ceramics basic research leading up to the multiscale material by design materials in extreme dynamic environments (MEDE) program. Part II: Dynamic effects on the physics and mechanisms of advanced ceramics such as boron carbide," International Journal of Ceramic Engineering and Science, 5:e10178, 2023. DOI:10.1002/ces2.10178.
32. M. Eminizer, S. Tabrisky, C. DiMarco, J. Diamond, K.T. Ramesh, T. C. Hufnagel, T.M. McQueen, and D. Elbert, "OpenMSIStream: A Python package for facilitating integration of streaming data in diverse laboratory environments," Journal of Open Source Software, 8(83), 896, 2023. https://doi.org/10.21105/joss.04896.
33. A. Zare, P. Malhotra, B. Yang, K. Hu, J. Du, M. Shaeffer, R. Haber, and K.T. Ramesh, "The effects of microstructure and inclusion distributions on dynamic failure processes in boron carbide ceramics," Journal of the American Ceramic Society, Vol. 106, pp. 4831–4851, 2023.
34. Shamseddin Akhondzadeh, Minju Kang, Ryan B. Sills, K.T. Ramesh, and Wei Cai, "Direct Comparison between Experiments and Dislocation Dynamics Simulations of High-Rate Deformation of Single Crystal Copper," Acta materialia, Vol. 250, Art. No. 118851, 2023.
35. N. Mitra and K.T. Ramesh, "Physics of Molecular Deformation Mechanisms in 6H-SiC," Modeling and Simulation in Materials Science & Engineering, Vol. 31, No. 3, Art. No. 035006, 2023.
36. Christopher S. DiMarco, Peter Lim, Debjoy Mallick, Laszlo Kecskes, Timothy Weihs, and K.T. Ramesh, "Spall failure of ECAE Mg-Al alloys at extreme strain rates: influence of microstructure," Metals, Vol. 13, No. 3, Article No. 454, 2023.
37. Daly, R.T., Ernst, C.M., Barnouin, O.S. *et al.*, "Successful Kinetic Impact into an Asteroid for Planetary Defense," Nature, Vol. 616, No. 7957, pg. 443, (2023). https://doi.org/10.1038/s41586-023-05810-5.
38. X. Sun, B.S. Kuwik, Q. Yang, S. Chocron, R.C. Hurley, R.A. Haber, J.C. LaSalvia, and K.T. Ramesh,

"Effects of Particle Size, Shape and Loading Rate on the Normal Compaction of an Advanced Granular Ceramic," Powder Technology, Vol. 417, Art. No. 118243, 2023.

39. Dung-Yi Wu, Chengyun Miao, Christopher DiMarco, Debjoy D. Mallick, K.T. Ramesh, and Todd C. Hufnagel, "Microstructural effects on the spall failure of 7085 aluminum alloy," Materials Science and Engineering A, Vol. 866, 144674, 2023.
40. X. Sun, D.-Y. Wu, M. Kang, K.T. Ramesh, and L.J. Kecskes, "Properties and Hardening Behavior of Equal Channel Angular Extrusion Processed Mg-Al Binary Alloys," Materials Characterization, Vol. 195, 112514, 2023.
41. K. Upadhyay, A. Alshareef, A.K. Knutsen, C.L. Johnson, A. Carass, P.V. Bayly, D.L. Pham, J.L. Prince, and K.T. Ramesh, "Development and Validation of Subject-Specific 3D Human Head Models Based on a Nonlinear Visco-Hyperelastic Constitutive Framework," Journal of the Royal Society-Interface, Vol. 19, No. 195, Art. 20220561, 2022. DOI: 10.1098/rsif.2022.0561
42. D. Kempesis, L. Iannucci, K.T. Ramesh, S. Del Rosso, P.T. Curtis, D. Pope, and P.W. Duke, "Micromechanical analysis of high fibre volume fraction polymeric laminates using micrograph-based representative volume element models," Composites Science & Technology, Vol. 229, Art. 109680, 2022. DOI: 10.1016/j.compscitech.2022.109680
43. K. Upadhyay, D.G. Giovanis, A. Alshareef, A.K. Knutsen, C.L. Johnson, A. Carass, P.V. Bayly, M.D. Shields, and K.T. Ramesh, "Data-driven Uncertainty Quantification in Computational Human Head Models," Computer Methods in Applied Mechanics and Engineering, Vol. 398, Art. 115108, 2022. DOI: 10.1016/j.cma.2022.115108
44. J. Parker, Y.T. Tracy Ling, and K.T. Ramesh, "Effect of Microstructure on the Dynamic Behavior of Ultra-high-molecular-weight polyethylene (UHMWPE) Composites," Composites Part A, Vol. 156, Article No. 106833, 2022. DOI: 10.1016/j.compositesa.2022.106833
45. Arezoo Zare, Mo-Rigen He, Michael Straker, M.V.S. Chandrashekhar, Michael Spencer, Kevin J. Hemker, James W. McCauley, and K.T. Ramesh, "Mechanical Characterization of Boron Carbide Single Crystals," Journal of the American Ceramic Society, Vol. 105, No. 5, pp. 3657-3657, 2022. DOI: 10.1111/jace.18065.
46. KT Ramesh, Lori Graham-Brady, Bill Goddard, Ryan Hurley, Mark Robbins, Andrew Tonge, Amartya Bhattacharjee, Joel T. Clemmer, Qinglei Zeng, Weixin Li, Yidi Shen, Qi An, and Nilanjan Mitra, "Models for the behavior of boron carbide in extreme dynamic environments," Journal of the American Ceramic Society, Vol. 105, No. 5, pp.3043-3061, 2022. http://doi.org/10.1111/jace.18071.
47. A. Alshareef, A. K. Knutsen, C. L. Johnson, A. Carass, K. Upadhyay, P. V. Bayly, D. L. Pham, J. L. Prince, and K.T. Ramesh, "Integrating Material Properties from Magnetic Resonance Elastography into Subject-Specific Computational Models for the Human Brain," Brain Multiphysics, Vol. 2, No. 100038, 2021. DOI: 10.1016/j.brain.2021.100038
48. M. Kang, K. Hazeli, K.Y. Xie, N. Dixit, K.J. Hemker, and K.T. Ramesh, "The mechanical behavior of single crystal and polycrystalline pure magnesium," Mechanics of Materials, Vol. 163, Art. 104078, 2021. DOI: 10.1016/j.mechmat.2021.104078
49. S.P. Joshi, Q. Wei, T.C. Hufnagel, J. Wilkerson, J. El-Awady, J. Kimberley, B. Ravaji, and K.T. Ramesh, "Insights from the MEDE Program: An Overview of Microstructure-Property Linkages in the Dynamic Behaviors of Magnesium Alloys," Mechanics of Materials, Vol. 163, Art. 104084, 2021. DOI: 10.1016/j.mechmat.2021.104084

50. D.D. Mallick, S.E. Prameela, D. Ozturk, C.L. Williams, M. Kang, G.M. Valentino, J.T. Lloyd, J.W. Wilkerson, T.P. Weihs, and K.T. Ramesh, "Spall Strength in Pure and Alloyed Magnesium: A Compendium of Research Efforts from the CMEDE 10-Year Effort," Mechanics of Materials, Vol. 162, Art. 104065, 2021. DOI: 10.1016/j.mechmat.2021.104065
51. Kelvin Xie, Kavan Hazeli, Neha Dixit, Kevin Hemker, & K.T. Ramesh, "{10-12} Twin boundary migration mechanisms in quasi-statically compressed and plate-impacted Mg single crystals," Science Advances, Vol. 7, No. 42, 2021. DOI: 10.1126/sciadv.abg3443
52. P.V. Bayly, A. Alshareef, A.K. Knutsen, K. Upadhyay, R.J. Okamoto, A. Carass, J.A. Butman, D.L. Pham, J.L. Prince, K.T. Ramesh, C.L. Johnson, "MR imaging of human brain mechanics in vivo: New measurements and applications to the development of computational models of brain injury," Annals of Biomedical Engineering, Vol. 49, No. 10, pp.2677-2692, 2021. DOI: 10.1007/s10439-021-02820-0.
53. W. Li and K.T. Ramesh, "A finite deformation framework for mechanism-based constitutive models of the dynamic behavior of brittle materials," Journal of the Mechanics and Physics of Solids, Vol. 155, Art. 104518, 2021. DOI: 10.1016/j.jmps.2021.104518
54. Adyota Gupta, Ryan Crum, Chongpu Zhai, K.T. Ramesh, and Ryan Hurley, "Quantifying particle-scale 3D granular dynamics during rapid compaction from time-resolved in-situ 2D X-ray images," Journal of Applied Physics, Vol. 129, No. 22, 2021. DOI: 10.1063/5.0051642
55. S.E. Prameela, T.P. Weihs, and K.T. Ramesh, "Young scholars benefit from research collaboration," Nature Materials, (reference number: NM21030924), 2021. DOI:10.1038/s41563-021-01009-z
56. Q. Zeng, J.W. McCauley and K.T. Ramesh, "A mechanism-based model for the impact response of quartz," Journal of Geophysical Research: Solid Earth, Vol. 126, No. 3, Article e2020JB020209, 2021. DOI: 10.1029/2020JB020209.
57. M. Zhao and K.T. Ramesh, "Deformation and failure mechanisms in a magnesium alloy under uniaxial compressive loading," Journal of Dynamic Behavior of Materials, Vol. 6, pp. 303-316, 2020.
58. D. D. Mallick, J. Parker, J.W. Wilkerson, and K.T. Ramesh, "Estimating Void Nucleation Statistics in Laser-Driven Spall," Journal of Dynamic Behavior of Materials, Vol. 6 (3), pp. 268-277, 2020.
59. C.L. Williams, C. Kale, S.A. Turnage, L. Shannahan, P. Rigg, B. Li, K. Solanki, R. Becker, T.C. Hufnagel, and K.T. Ramesh, "Real-time observation of twinning-detwinning in shock compressed magnesium via time-resolved in situ synchrotron XRD experiments," Physical Review Materials, Vol. 4, No. 8, Art. 083603, 2020.
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61. X. Sun, A. Chauhan, D. Mallick, A.L. Tonge, J.W. McCauley, K.J. Hemker, J. LaSalvia, and K.T. Ramesh, "Granular flow of an advanced ceramic under ultra-high strain rates and high pressures," Journal of the Mechanics and Physics of Solids, Vol. 143, Article No. 104031, 2020. DOI: 10.1016/j.jmps.2020.104031
62. D. D. Mallick and K.T. Ramesh, "Dynamic Fragmentation of Boron Carbide Using Laser-Driven Flyers," International Journal of Impact Engineering, Vol. 136, 103416, 2020.
63. A.M. Dagro and K.T. Ramesh, "A mechanism for injury through cerebral arteriole inflation," Biomechanics and Modeling in Mechanobiology, Vol. 18, No. 3, pp. 651-663, 2019.

64. Chauhan, X. Sun, K.T. Ramesh and K.J. Hemker, "Dynamic failure mechanisms of granular boron carbide under multi-axial high-strain-rate loading," Scripta materialia, Vol. 173, pp. 125-128, 2019.
65. A.M. Dagro, L. Rajbhandari, S. Orrego, S.H. Kang, A. Venkatesan, and K.T. Ramesh, "Quantifying the Local Mechanical Properties of Cells in a Fibrous Three-Dimensional Microenvironment," Biophysical Journal, Vol. 117, 817–828, 2019. DOI: https://doi.org/10.1016/j.bpj.2019.07.042
66. A.M. Dagro and K.T. Ramesh, "Nonlinear contact mechanics for the indentation of hyperelastic cylindrical bodies," Mechanics of Soft Materials, Vol. 1:7, 2019. DOI: https://doi.org/10.1007/s42558-019-0006-0
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68. V. Kannan, X. Ma, N. M. Krywopusk, L. J. Kecskes, T.P. Weihs and K. T. Ramesh, "The effect of strain rate on the mechanisms of plastic flow and failure of an ECAE AZ31B magnesium alloy," Journal of Materials Science, Vol. 54, No. 20, pp. 13394-13419, 2019.
69. C. El Mir, M. Delbo and K.T. Ramesh, "The efficiency of thermal fatigue in regolith generation on small airless bodies," Icarus, Vol. 333, pp. 356-370, 2019.
70. Q. Zeng, A.L. Tonge and K.T. Ramesh, "A multi-mechanism constitutive model for the dynamic failure of quasi-brittle materials. Part II - An integrative model," Journal of the Mechanics and Physics of Solids, Vol. 131, pp. 20-42, 2019.
71. Q. Zeng, A.L. Tonge and K.T. Ramesh, "A multi-mechanism constitutive model for the dynamic failure of quasi-brittle materials. Part I – Amorphization as a failure mode," Journal of the Mechanics and Physics of Solids, Vol. 130, pp. 370-392, 2019.
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61. National Science Foundation, Mechanics & Materials Program: "Fundamental Studies in Adiabatic Shear Localization;" $223,673, with K.J. Hemker. 8/1/94-7/31/97.
62. Army Research Laboratory, Materials Directorate: "Biomimetics & Active Materials;" $70,000, with A.S. Douglas. 7/94 - 6/95.
63. 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.
64. 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.
65. Battelle Scientific Services: "The Dynamic Mechanical Properties of Tungsten Composites;" $40,290. 9/94-8/31/95.
66. 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.
67. 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.
68. Cabot Corporation: "The Dynamic Response of Tantalum and Tantalum Alloys;" $15,153. 1/1/92 - 12/1/92.
69. 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.
70. 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.

71. National Science Foundation, Manufacturing Processes Program: "Constitutive Models for Understanding the Effect of Porosity on Localization in Manufacturing Processes," with P. Ponte-Castañeda; $155,928. 09/01/90 - 08/31/92.
72. National Science Foundation, Tribology Program; Research Experiences for Undergraduates Supplement to "Fundamental Experiments in EHD Lubrication;" $10,000. 07/01/90 - 06/30/91.
73. National Science Foundation, Tribology Program; Research Initiation Award: "Fundamental Experiments in Elastohydrodynamic Lubrication;" $78,695. 07/01/89 - 06/30/91.

PRESENTATIONS

Invited Seminars, Plenary Lectures, and Keynote Lectures:

1. *Swinburne University of Science & Technology,* Melbourne, VIC, Australia: "How to Stop an Incoming Asteroid." April 11, 2025.
2. *Monash University,* Melbourne, VIC, Australia: "High-throughput methods for the AI-driven design of materials." April 10, 2025.
3. *University of Sydney,* Sydney, NSW, Australia: "Planetary Defense: How to Stop an Asteroid." April 8, 2025.
4. Civil and Natural Resources Engineering, *University of Canterbury,* Christchurch, NZ: "The Dynamic Response of Geomaterials: Sand, Sandstone, and Basalt." April 3, 2025.
5. School of Earth and Environment, *University of Canterbury,* Christchurch, NZ: "Rocks, Shocks, and Asteroids." August 2024.
6. *Sidney Kimmel Cancer Center, Johns Hopkins Hospital,* Baltimore, MD: "The Rise of the Machines: Discovery and Design in the age of AI." May 2024.
7. *Johns Hopkins Applied Physics Laboratory,* Laurel, MD: "Artificial Intelligence for Materials Design." With T. C. Hufnagel. May 2024.
8. *Johns Hopkins Technology Ventures,* Baltimore, MD: "Science, Engineering, and Artificial Intelligence." March 2024.
9. *University of Pennsylvania:* "Defending the planet: The DART mission, and mechanics among the asteroids." September 2023.
10. *University of Rhode Island:* "Defending the planet: The DART mission, and the critical role of mechanics among the asteroids." February 2023.
11. *Massachusetts Institute of Technology:* "Breaking up is hard to do." April 2022.
12. *Brown University:* "The Mechanics of the Live Human Brain." April 2022.
13. *Cornell University:* "Impact on metals at hypersonic velocities." November 2021.
14. *Michigan Technological University:* "Traumatic Brain Injury, and the Mechanics of the Live Human Brain." October 2021.
15. *John Rinehart Award Lecture, DYMAT:* "Breaking up is hard to do: the dynamics of ceramics." DYMAT Conference, September 2021.
16. *DYMAT Webinar*: "Traumatic Brain Injury and the Dynamics of the Live Human Brain." DYMAT,

April 2021.

17. *Simha Symposium, IISc:* "The Dynamic Granular Flow of An Advanced Ceramic." Virtual invited presentation, July 2020.
18. *National Research Council DMMI Workshop on COVID Impacts on Science & Technology:* "COVID impacts on large research centers." Virtual invited presentation, December 2020.
19. *Mechanics of Materials International Lecture:* "Incoming: The Disruption of Asteroids." Virtual invited seminar at Indian Institute of Science, November 2020.
20. *CREDDS Summer School:* "Dynamic deformations in nature and technology." Virtual invited seminar at Texas A&M, June 2020.
21. *Worcester Polytechnic Institute:* "Incoming: The Disruption of Asteroids." Worcester, MA, Feb. 2020.
22. *CoorsTek Inc:* "The Swift and the Strong: The Dynamics of Advanced Ceramics." Golden, CO, March 2019.
23. *Georgia Institute of Technology:* "Incoming: The Disruption of Asteroids." Atlanta, GA, Nov. 2019.
24. *Koiter Medal Lecture, ASME:* "The Mechanics of Massive Dynamic Failure." International Mechanical Engineering Conference and Exposition, Salt Lake City, Nov. 2019.
25. *Pan American Conference on Applied Mechanics:* "Dynamics of Traumatic Brain Injury: A Computational Model of the Living Human Brain." Ann Arbor, May 2019.
26. *Johns Hopkins Controllers Office:* "Protecting People, Structures, and the Planet." Baltimore, 2019.
27. *Massachusetts Institute of Technology*: "Breaking Worlds: The Disruption and Breakdown of Asteroids." Cambridge, MA, Nov. 6, 2018.
28. *ANSYS, Inc:* "Integrated multiscale materials design for extreme environments." Pittsburgh, PA, Nov. 2018.
29. *W.L. Gore & Associates*: "Integrated multiscale materials design for extreme environments." Newark, DE, May 31, 2018.
30. *Balticon, The Baltimore Science Fiction Convention*: "The Dynamics of Traumatic Brain Injury." Baltimore, MD, May 26, 2018.
31. *Indian Institute of Technology, Bombay*: "Integrated multiscale materials design for extreme environments." Bombay, India, Feb. 16, 2018.
32. *Stanford University (Mechanical Engineering)*: "Breaking Worlds: The Disruption and Breakdown of Asteroids." Stanford, CA, Jan. 11, 2018.
33. *Maryland Institute College of Art (Forum Lecture)*: "Protecting People, Structures and the Planet." Baltimore, MD, Nov. 13, 2017.
34. *University of Pittsburgh*: "The Multiscale Dynamics of Traumatic Brain Injury in Humans: Experiments and Models." Pittsburgh, PA, Sept. 14, 2017.
35. *University of Maryland,* College Park: "The Mechanical Behavior of Asteroidal Materials." College Park, MD. Feb. 10, 2017.
36. *National University of Singapore,* Singapore: "Thermal Fragmentation and the Surfaces of Near-Earth Asteroids." Singapore. Jan. 4, 2017.
37. *Corning, Inc.* "The Swift and the Strong: The Strength and Failure of Ceramics." Corning, NY. Oct. 7, 2016.

38. *University of Connecticut.* "The Secret Lives of Twins." Storrs, CT. Sept. 23, 2016.
39. *Naval Research Laboratory.* "Materials in Extremis." Washington, DC. May 2016.
40. *Observatoire de la Cote d'Azur.* "Thermal Fatigue and Regolith Formation on Airless Bodies." Nice, France. July 1, 2016.
41. *Applied Physics Laboratory,* Johns Hopkins University. "Keeping Your Head in the Game: The Dynamics of Traumatic Brain Injury." Laurel, MD, May 2016.
42. *UK Dynamic Materials Meeting*, Defense Science and Technology Laboratory, Wiltshire, England, Sept. 2015.
43. *Ohio State University,* Columbus, OH, Sept. 2015. "The Multiscale Mechanics of Traumatic Brain Injury."
44. *Dynamics of Heterogeneous Materials Workshop*, Arlington, VA, Sept. 2015. "Dynamics of Heterogeneous Materials."
45. *11th International DYMAT Conference*, Lugano, Switzerland, Sept. 2015. "Twinning in magnesium under dynamic loading."
46. *Society for Experimental Mechanics 2015 Conference and Exposition*, *Murray Lecture*, Costa Mesa, CA, June 2015. "Dynamics across the Scales: Rocks, Shocks and Asteroids."
47. *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."
48. *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."
49. Plenary Lecture, *Hopkinson Centenary Conference*, Cambridge, UK, Sept. 2014. "Scaling and Dynamics Applied to Materials and Asteroids."
50. *Engineering Innovation, Johns Hopkins University*, Baltimore, MD, July 2014. "Rocks, Shocks and Asteroids."
51. *Predictive Integrated Structural Materials Science Workshop, University of Michigan*, Ann Arbor, MI, May 2014 "The Materials in Extreme Dynamic Environments (MEDE) CRA."
52. *University of Texas*, Austin, TX, April 2014. "Keep your Head in the Game: The Mechanics of Traumatic Brain Injury in Sports."
53. *Malcolm G. McLaren Distinguished Lecture Symposium, Rutgers University*, New Brunswick, NJ, April 2014. "The Swift and the Strong: The Strength and Failure of Ceramics."
54. *Asteroids Comets Meteors*, Helsinki, Jun. 30 – Jul. 4, 2014. "A new material model for simulating large impacts on rocky bodies."
55. *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.
56. *Johns Hopkins University*, *S14 Mechanical Engineering Seminar Series*, Baltimore, MD, Jan. 2014. "Keep your Head in the Game: The Mechanics of Traumatic Brain Injury in Sports."
57. *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."
58. *International Workshop on Computational Mechanics and Materials,* Singapore, October 2013.

"Computational Mechanics Approaches to Injury of the Human Brain."

59. *APS Shock Compression of Condensed Matter,* Seattle, July 2013. "High rate deformation and failure mechanisms in brittle materials."
60. *North Carolina A&T University,* Greensboro, NC, May 2013: "Rocks, Shocks and Asteroids."
61. *Society of Brain Mapping and Therapeutics Congress,* Baltimore, May 2013: "A Multiscale Computational Approach to Estimating Axonal Damage under Inertial Loading of the Head."
62. *Glass Memorial Lecture, University of Toronto Institute of Aerospace Studies,* Toronto, Canada, May 2013: "Rocks, Shocks and Asteroids."
63. *University of Wisconsin-Madison, Department of Engineering Physics,* Madison, WI, April 2013: "Rocks, Shocks and Asteroids."
64. *Northwestern University, Department of Mechanical Engineering,* Chicago, IL, April 2013: "Rocks, Shocks and Asteroids."
65. *University of Notre Dame, Department of Mechanical Engineering*, South Bend, IN, April 2013: "Rocks, Shocks and Asteroids."
66. *Michigan State University, Department of Mechanical Engineering,* East Lansing, MI, April 2013: "Keep Your Head in the Game: The Mechanics of Traumatic Brain Injury."
67. *University of Michigan, Department of Mechanical Engineering,* Ann Arbor, MI, April 2013: "Keep Your Head in the Game: The Mechanics of Traumatic Brain Injury."
68. *University of Houston, Department of Mechanical Engineering,* Houston, TX, March 2013: "Rocks, Shocks and Asteroids: The Importance of Being Fractured."
69. *International Conference on Advanced Ceramics and Composites,* Daytona Beach, FL, January 2013: "Armor Ceramics in Extreme Dynamic Environments."
70. *Washington University at St. Louis, Department of Mechanical Engineering,* St. Louis, MO, November 2012: "Soft, Squishy and Fibrous: The Mechanics of Traumatic Brain Injury."
71. *Society of Engineering Science, Georgia Tech,* Atlanta, GA, October 2012: "The Secret Lives of Twins."
72. *ASME International Mechanical Engineering Conference & Exposition,* Houston, TX, November 2012: "Megamechanics: The Dynamic Failure of Large Bodies."
73. *University of Minnesota, Department of Aerospace Engineering and Mechanics,* Minneapolis, MN, October 2012: "Rocks, Shocks and Asteroids: The Importance of Being Fractured."
74. *Iowa State University, Department of Aerospace Engineering,* Ames, IA, October 2012: "Soft, Squishy and Fibrous: The Mechanics of Traumatic Brain Injury."
75. *Illinois Institute of Technology, Department of Mechanical Engineering,* Chicago, IL, October 2012: "Rocks, Shocks and Asteroids: The Importance of Being Fractured."
76. *University of Illinois at Urbana-Champaign, Department of Mechanical Engineering,* Urbana, IL, October 2012: "Soft, Squishy and Fibrous: The Mechanics of Traumatic Brain Injury."
77. *Purdue University, Department of Mechanical Engineering,* West Lafayette, IN, October 2012: "Soft, Squishy and Fibrous: The Mechanics of Traumatic Brain Injury."
78. *International Workshop on Computational Mechanics and Materials,* Baltimore, MD, September 2012: "Going to Extremes."
79. *University of Rhode Island, Department of Mechanical Engineering,* Kingston, RI, April 2012: "Rocks,

Shocks and Asteroids: Applications of Dynamic Fracture."

80. *TMS Annual Meeting*, Orlando, FL, Mar. 2012: "A Model for Diffuse Axonal Injury."
81. *Southwest Research Institute,* San Antonio, TX, December 2011: "Rocks, Shocks and Asteroids: The Dynamic Failure of Brittle Materials."
82. *Brown University, Division of Engineering, Providence, RI, September 2011:* "Rocks, Shocks and Asteroids: The Importance of Being Fractured."
83. *Pennsylvania State University, Department of Materials Science & Engineering,* State College, PA, October 2011: "Rocks, Shocks and Asteroids: The Dynamic Failure of Brittle Materials."
84. *IUTAM Symposium on Impact Biomechanics in Sport,* University College, Dublin, July 2011: "Adding Insult to Injury: The Dynamics of Human Tissues."
85. *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."
86. *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."
87. *Caltech,* Graduate Aeronautical Laboratories, November 2010: "Breaking Worlds: Life, Death, and the Importance of Being Fractured."
88. *Materials Science & Technology, Houston, TX,* October 2010: "The High-Strain-Rate Behavior of Heterogeneous Materials: Experiments and Models."
89. *47th Army Sagamore Materials Research Conference,* St. Michaels, MD, June 2010: "The High Strain Rate Behavior and Dynamic Failure of Lightweight Metals."
90. *Army Aluminum Armor Workshop,* Baltimore, MD, May 2010: "The Strengthening of Aluminum: Strain Rate and Grain Size Effects."
91. *ASEI*, Columbia, MD, June 20, 2010: "The Small, the Swift and the Strong."
92. *NASA Goddard,* Planetary Geodynamics Seminar, Greenbelt, MD, April 2010: "Strength, Impact and Fragmentation of Geophysical Materials."
93. *TMS Spring Conference,* Seattle, WA, February 2010: "Grain Size Effects on the Rate Sensitivity of FCC Metals."
94. *Carnegie-Mellon University,* Department of Civil Engineering, Pittsburgh, PA, October 2009: "The Small, the Swift and the Strong."
95. *University of Florida,* Department of Mechanical Engineering, Gainesville, FL, October 2009: "The Processes of Massive Dynamic Failure."
96. *National University of Singapore, Singapore*, Department of Mechanical Engineering, July 2009: "The Small, the Swift and the Strong."
97. *Society of Experimental Mechanics 2009,* Albuquerque, NM, June 2009: Keynote Lecture, "The Processes of Massive Dynamic Failure."
98. *Johns Hopkins University Applied Physics Laboratory,* June 2009: "The Small, the Swift and the Strong."
99. *Shock Compression of Condensed Matter,* Nashville, TN, June 2009: "Length Scales and Nanomaterials."
100. *ONR Materials Division*, April 20, 2009: "The Mechanics of Nanomaterials."
101. *Rutgers University*, Department of Mechanical and Aerospace Engineering, Piscataway, NJ,

November 2008, "The Processes of Massive Dynamic Failure."

102. *University of Michigan*, Department of Mechanical Engineering, Ann Arbor, MI, October 2008, "The Processes of Massive Dynamic Failure."
103. *Illinois Institute of Technology,* Department of Mechanical and Aerospace Engineering, Chicago, IL, October 2008: "The Small, the Swift and the Strong."
104. *EPFL*, Department of Civil Engineering and Computational Solid Mechanics Laboratory, Lausanne, Switzerland, October 2008: "The Small, the Swift and the Strong."
105. *ETH Zurich,* Zurich, Switzerland, October 2008: "The Small, the Swift and the Strong."
106. *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.
107. *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.
108. *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."
109. *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.
110. *Shock and Impact 2007,* Keynote Lecture, Beijing, China, October 2007: "Dynamic Failure in Materials and Structures under Impact Loading."
111. *Northwestern Polytechnical University,* Xi'an, China, October 2007: "The Processes of Massive Dynamic Failure."
112. *University of Nebraska,* Department of Engineering Mechanics, Lincoln, NE, October 2007: "The Small, the Swift and the Strong."
113. *Johns Hopkins University,* Department of Physics and Astronomy, Baltimore, MD, November 2007: "The Small, the Swift and the Strong."
114. *Johns Hopkins University,* Department of Mechanical Engineering, Baltimore, MD, September 2007: "The Small, the Swift and the Strong."
115. *Nanomaterials for Defense Applications,* San Diego CA, April 2007: "The High-Strain-Rate Properties of Nanostructured Metals."
116. *Michigan Technological University,* Department of Mechanical Engineering, Houghton MI, April 2007: "The Processes of Massive Dynamic Failure."
117. *Army Symposium on Solid Mechanics,* Keynote Lecture, Baltimore, MD, April 2007: "The Small, the Swift and the Strong: Observations in Solid Mechanics."
118. *George Irwin Symposium, University of Maryland,* March 20, 2007: "The Processes of Massive Dynamic Failure."
119. *University of Cyprus, Nicosia, Cyprus,* October 25, 2006: "Feeling the Impact: The Dynamics of Human Tissues."
120. *Indian Institute of Science,* Bangalore, India, July 5, 2006: "The Effects of Microstructure and Nanostructure on the Mechanical Behavior of Heterogeneous Metals."

121. *Lawrence Livermore National Laboratory,* Livermore, CA, March 23, 2006: "The High-Strain-Rate Deformation of Structural and Nanocrystalline Metals."
122. *Sandia National Laboratory,* Albuquerque, NM, March 22, 2006: "The High-Rate Failure of Ceramics: Direct Visualization and Modeling."
123. *ARO Ceramics Damage Workshop,* VA, Feb. 14-15, 2006: "Ceramic Damage under Dynamic Loading: Direct Visualization and Modeling."
124. *Nanosecurity 2005, Max Planck Institut Halle,* October 24, 2005: "The Mechanical Behavior of Nanometals and Nanoceramics for Impact Applications."
125. *General Electric Global Research,* Niskayuna, September 23, 2005: "The Effects of Microstructure and Nanostructure on the Mechanical Behavior of Heterogeneous Metals."
126. *Naval Surface Warfare Center,* ONR, Feb. 7, 2005: "Void Nucleation and Growth in Shock Loading."
127. *Massachusetts Institute of Technology,* Mechanical Engineering, May 9, 2005: "Feeling the Impact: The Dynamics of Human Tissues."
128. *University of Illinois,* Mechanical & Industrial Engineering, March 28, 2005: "The Mechanical Behavior of Nanostructured Metals."
129. *Brown University,* Providence, RI, October 25, 2004: "The Mechanical Behavior of Nanostructured Metals."
130. *Keynote Lecture, International Workshop on Computational Mechanics of Materials,* Goa, India, September 23, 2004. "The Dynamic Fragmentation of Brittle Materials."
131. *General Electric Jack Welch Research Center,* Bangalore, India, Sept. 21, 2004. "Mechanical Behavior of Nanostructured Metals."
132. *General Electric Jack Welch Research Center,* Bangalore, India, Sept. 21, 2004. "The High Strain Rate Response of Engineering and Armor Ceramics."
133. *Georgia Institute of Technology,* Mechanical Engineering and Materials Science Joint Seminars, Atlanta, GA, April 15, 2004: "Mechanical Behavior of Nanostructured Metals."
134. *Johns Hopkins Applied Physics Laboratory,* Laurel, MD, March 25, 2004: "Dynamic Failure and Fragmentation."
135. *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.
136. *China Institute of Mechanics,* Beijing, China, October 14, 2003: "Mechanical Behavior of Nanostructured Metals."
137. *Beijing Institute of Technology*, Beijing, China, October 14, 2003: "The High Strain Rate Response of Engineering and Armor Ceramics."
138. *Northwestern Polytechnical University*, Xian, China, October 9, 2003: "The High-Strain-Rate Response of Nanostructured Metals."
139. *University of Cambridge,* Cavendish Laboratory, May 15, 2003: "Rapid Deformation Studies of Bulk Metallic Glasses."
140. *University of Cambridge,* Cavendish Laboratory, February 27, 2003: "High-Strain-Rate Deformations and Adiabatic Shear Bands in BCC and HCP Metals."

141. *Ernst Mach Institute,* Freiburg, Germany, February 14, 2003: "The Dynamic Failure of Advanced Materials."
142. *University of Cambridge,* Cavendish Laboratory, February 10, 2003: "The Dynamic Failure of Advanced Materials."
143. *Royal Military College of Science,* Shrivenham, UK, February 12, 2003: "The Dynamic Failure of Advanced Materials."
144. *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."
145. *University of Cambridge,* Department of Engineering, Cambridge, UK, November 15, 2002: "From Microstructures to Nanostructures: The Behavior of Materials at High Strain Rates."
146. *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."
147. *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.
148. *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.
149. *Southern Methodist University,* Dallas, TX, March 25, 2002: "From Microstructures to Nanostructures: The Behavior of Materials at High Strain Rates." Southwest Mechanics Lecture Series.
150. *Tulane University,* New Orleans, LA, March 26, 2002: "Constitutive Response of Active Polymer Gels as Analogs to Biological Materials." Southwest Mechanics Lecture Series.
151. *University of Delaware,* Wilmington, DE, February 22, 2002: "From Microstructures to Nanostructures: The High-Rate Response of Materials."
152. *Drexel University,* Philadelphia, PA, January 2001: "High-Strain-Rate Deformations and Adiabatic Shear Bands in BCC and HCP Metals."
153. *Michigan Technological University,* Houghton, MI, October 2000: "Constitutive Response of Active Polymer Gels as Analogs to Biological Materials."
154. *Army Research Laboratory,* Aberdeen, MD, February 2000: "The Influence of Crystal Structure on the Dynamic Behavior of Materials at High Temperatures."
155. *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.
156. *National University of Singapore* - IMRE, Singapore, July 1997: "The Dynamic Behavior and Dynamic Failure of Metal-Matrix Composites."
157. *Indian Institute of Science,* Bangalore, India, June 1997: "High-Rate Deformations, Deformation Twinning and Shear Localization in Alpha-Titanium."
158. *California Institute of Technology,* Pasadena, CA, May 1997: "Grace Under Pressure: The Strength of Liquids."
159. *University of Delaware,* Wilmington, DE, October 1996: "The Strength and Compressibility of

Liquids."

160. *Arizona State University*, Tempe, AZ, October 1996: "High-Rate Deformations and Twinning in Titanium."
161. *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."
162. *Virginia Polytechnic Institute & State University,* Blacksburg, VA, September 1995: "The Dynamic Behavior and Dynamic Failure of Metal-Matrix Composites."
163. *U.S. Armament Research, Development and Engineering Center*, Dover, NJ, September 1995: "The Dynamic Deformations of Tungsten-Based Composites: Experiments and Modeling."
164. *State University of New York, Stony Brook,* NY, April 1995: "Dynamic Deformation and Failure in Metal-Matrix Composites."
165. *University of Minnesota,* Minneapolis, MN, March 1995: "Dynamic Deformations and Dynamic Failures in a Metal-Matrix Composite."
166. *University of Texas,* Arlington, TX, October 1994: "Dynamic Deformations and Shear Localization in a Tungsten-Based Composite."
167. *Indian Institute of Science,* Bangalore, India, June 1994: "Dynamic Deformations and Failure Mechanisms in a Metal-Matrix Composite."
168. *Drexel University*, Philadelphia, PA, April 1994: "Dynamic Deformations and Dynamic Failure Mechanisms in a Metal-Matrix Composite."
169. *Cornell University,* Ithaca, NY, March 1994: "Dynamic Deformations and Shear Localization in a Tungsten-Based Composite."
170. *California Institute of Technology*, Symposium on Dynamic Failure, Pasadena, CA, February 1994: "Dynamic Failure Mechanisms in a Metal-Matrix Composite."
171. *Brown University,* Providence, Nov. 1993: "Dynamic Measurements in Compressible Solids and Liquids."
172. *Virginia Polytechnic Institute & State University,* Blacksburg, VA, April 1993: "Microstructural Influences on the Deformation and Failure of Tungsten Heavy Alloys."
173. *Ohio State University,* Columbus, February 1993: "The Rheology of Elastohydrodynamic Lubricants."
174. *Gordon Conference on Tribology,* Plymouth, NH, June 1992: "Lubricant Rheology and the Localization of Deformations."
175. *Univ. of Pennsylvania,* Philadelphia, April 1992: "The Effect of Porosity on the Plastic Deformation of Metals."
176. *Army Research Laboratory,* Aberdeen, MD, Nov. 1992: "Micromechanisms of Deformation and Failure."
177. *University of Illinois at Urbana-Champaign,* Urbana, IL, February 1991: "The Rheology of Elastohydrodynamic Lubricants."
178. *University of California, San Diego,* CA, Dec. 1990: "The Rheology of Elastohydrodynamic Lubricants."
179. *California Inst. Technology*, Pasadena, CA, Oct. 1990: "The Rheology of Elastohydrodynamic

Lubricants."

Invited and Contributed Conference Presentations

1. Mach Conference, Annapolis, MD, April 2025: "Bayesian Calibration for High-Velocity Impact Problems through Ensemble-Based Data Assimilation." With Rong Jin* et al.
2. Mach Conference, Annapolis, MD, April 2025: "Dynamic deformation of granite under multiaxial compression." With X. Zhao* and T.C. Hufnagel.
3. Mach Conference, Annapolis, MD, April 2025: "Ballistic and shock response of UHMWPE composites." With M. Le* et al.
4. Mach Conference, Annapolis, MD, April 2025: "Penetration and Hugoniot experiments on rubber." With J.M. Diamond* et al.
5. Mach Conference, Annapolis, MD, April 2025: "Exploring the HEL of additively manufactured SiC-based ceramics at high temperatures." With L. Rackers* et al.
6. Mach Conference, Annapolis, MD, April 2025: "Laser Microflyer Impact experiments on silicon carbide." With K. Muly* et al.
7. Mach Conference, Annapolis, MD, April 2025: "Automated Laser-Driven Plate Impact Experiments to Evaluate Copper Spall Strength Across Grain Size, Orientation, Strain Rate, and Pressure." With P. Wanchoo* et al.
8. Spring TMS Annual Meeting & Exhibition, Las Vegas, NV, March 23-27, 2025: "In situ imaging of spall fracture." With J.M. Diamond et al. Presented by G. Simpson.
9. Spring TMS Annual Meeting & Exhibition, Las Vegas, NV, March 23-27, 2025: "High-Throughput Synthesis and Rapid Characterization of Cu and Cu-Ti Alloys." With R. Berlia* et al.
10. 2025 Spring MRS Conference, Seattle, WA, April 7-11, 2025: "Development of an automated laboratory for high-throughput characterization of structural materials for extreme environments." With T.C. Hufnagel* et al.
11. Lunar and Planetary Science Conference, Houston, TX, April 2025: "Hypervelocity Impact study of a boulder on a rubble pile asteroid." Poster presented by M. Le.
12. International Conference on Advanced Ceramics and Composites, Daytona Beach, FL, January 2025: "Impact performance and cratering behavior in boron carbide ceramics." Presented by K. Muly.
13. International Conference on Advanced Ceramics and Composites, Daytona Beach, FL, January 2025: "Microstructural effects on the dynamic behavior of silicon carbide." Presented by K. Muly.
14. ASME IMECE, Portland, OR, November 2024: "Closed loop vision guided control of flyer position for high-throughput laser shock experiments." With Axel Krieger et al., presented by J.M. Diamond.
15. 75th International Astronautical Congress, Milan, Italy, October 2024: "Hypervelocity impact studies on rubble pile asteroids." With Minh Le* et al.
16. Hypervelocity Impact Society Conference, Tsukuba, Japan, September 2024: "In situ imaging of spall fracture." With J.M. Diamond* et al.
17. Hypervelocity Impact Society Conference, Tsukuba, Japan, September 2024: "Flash X-ray Investigation of Ejecta Developed During High-Velocity Impact into Boron Carbide." With Konrad

Muly* et al.

18. Hypervelocity Impact Society Conference, Tsukuba, Japan, September 2024: "experiments and biological assays on microorganisms subjected to impact stresses." With Lily Zhao* et al.
19. Hypervelocity Impact Society Conference, Tsukuba, Japan, September 2024: "Erosion From Hypervelocity Impacts with Simultaneously Launched Particles." With J. Moreno* et al.
20. Hypervelocity Impact Society Conference, Tsukuba, Japan, September 2024: "Momentum enhancement resulting from hypervelocity impact into a basalt boulder." With Minh Le* et al.
21. Annual Materials Science & Technology Conference, Pittsburgh, PA, October 2024: "In situ studies of dynamic brittle fracture using Shack-Hartmann wavefront sensing and x-ray phase contrast imaging." With T.C. Hufnagel* et al.
22. Society of Engineering Science Conference, Hangzhou, China, August 2024: "Instabilities in Granular Media: Particle Dynamics and Stress Fluctuations." With A. Gupta and R.C. Hurley.*
23. Society for Experimental Mechanics, Vancouver, WA, June 2024: "In situ imaging of spall fracture." With J.M. Diamond.
24. Society for Experimental Mechanics, Vancouver, WA, June 2024: "Automated high throughput laser driven plate impact experiments for AI- driven material design." With P. Wanchoo* et al.
25. Lunar and Planetary Science Conference, Houston, TX, April 2024: "Mechanisms in Extremophiles subjected to Planetary Impact Conditions." With L. Zhao* et al.
26. Lunar and Planetary Science Conference, Houston, TX, April 2024: "Hypervelocity Impact Experiments onto Boulders resting on a Granular Bed." With M. Le* et al.
27. Lunar and Planetary Science Conference, Houston, TX, April 2024: "Fracturing by Thermal Fatigue on Dimorphos." With A. Lucchetti* et al.
28. TMS Annual Meeting, Orlando, FL, March 2024: "A Mesoscale-continuum Modeling Method to Predict the Acceleration of Laser-driven Flyers." With Ching Chen, Roshan Sebastian, Jacob M. Diamond, and Avinash M. Dongare.*
29. TMS Annual Meeting, Orlando, FL, March 2024: "High-throughput Characterization of Dynamic Tensile Failure in Pure Niobium and Niobium-titanium Alloy." With A. Zare* and J.M. Diamond.
30. TMS Annual Meeting, Orlando, FL, March 2024: "Rapid quantification of dynamic and spall strength of metals across strain rates." With S.E. Prameela* et al.
31. Mach Conference, Annapolis, MD, April 2024: "High-throughput laser-driven micro-flyer spall failure of niobium." With della Ventura* et al.
32. Mach Conference, Annapolis, MD, April 2024: "In-situ Ejecta and Cratering Behavior of Boron Carbide Ceramics." With K. Muly* et al.
33. Mach Conference, Annapolis, MD, April 2024: "Guiding mission design through hypervelocity impact experiments on rubble pile asteroids." With M. Le* et al.
34. Mach Conference, Annapolis, MD, April 2024: "Automated high-throughput laser driven flyer impact experiments for spall strength evaluation." With P. Wanchoo* et al.
35. Mach Conference, Annapolis, MD, April 2024: "In situ imaging of spall fracture." With J.M. Diamond* et al.
36. International Conference on Advanced Ceramics and Composites, Daytona Beach, FL, January 2024: "Design of brittle solids for extreme dynamic environments: Challenges and developments."

With A. Zare* and D. Giovannis.

37. International Conference on Advanced Ceramics and Composites, Daytona Beach, FL, January 2024: "Comparison of the high-velocity impact performance of boron carbide ceramics." With K. Muly* et al.
38. Genome Informatics, Cold Spring Harbor, NY, December 2023: "The Effect of Dynamic Pressure on the Gene Expression of *Deinococcus radiodurans* R1." With L. Zhao, C.A. Perez-Fernandez,* and J. DiRuggiero.
39. International Conference on Experimental Mechanics, Porto, Portugal, July 2023: "Modified Reflective Digital Gradient Sensing for Impact Applications." With P. Malhotra, C. Miao, N. Mitra, J. Moreno, and M. Shaeffer.
40. Asteroids, Comets, and Meteors, Flagstaff, AZ, June 2023: "3D Characterization of the Ejecta Produced by the DART Impact." Farnham* et al.
41. Asteroids, Comets, and Meteors, Flagstaff, AZ, June 2023: "Long-term evolution of Dimorphos's tail observed by Hubble Space Telescope." J.-Y. Li* et al.
42. Lunar and Planetary Science Conference, Woodlands, TX, March 2023: "Microbial Response to Extreme Impact Stresses." With L. Zhao,* C.A. Perez-Fernandez, and J. DiRuggiero.
43. Lunar and Planetary Science Conference, Woodlands, TX, March 2023: "Spatial Distribution of the Boulders in the DART Impact Ejecta – A 3-D Analysis." Tony Farnham* et al.
44. Lunar and Planetary Science Conference, Woodlands, TX, March 2023: "Constraining Dimorphos's material properties and estimates of crater size from the DART impact." A.M. Stickle et al.
45. Lunar and Planetary Science Conference, Woodlands, TX, March 2023: "Hubble Space Telescope observations of the evolution of Dimorphos's ejecta created by the DART impact." J.-Y. Li et al.
46. Mach Conference, Towson, MD, April 2023: "An Analytical, Multiscale Model for Predicting Granular Elasticity Incorporating Force Chain Mechanics." With A. Gupta* and R. Hurley.
47. Mach Conference, Towson, MD, April 2023: "Spall strength of polycarbonate measured using laser-driven micro-flyer impact experiments." With J. M. Diamond.*
48. Mach Conference, Towson, MD, April 2023: "Anisotropic behavior of AZ31B Magnesium under hypervelocity impact." With YunHo Kim,* G. Simpson, D. Magagnosc, L. Kecskes, J.T. Lloyd.
49. Mach Conference, Towson, MD, April 2023: "Fragmentation Characteristics of Swaged Powder Compacts under High-Velocity Projectile Impact." With G. Simpson,* J. Grant, T. Weihs.
50. Mach Conference, Towson, MD, April 2023: "A multi-mechanism model for fluid saturated, brittle granular materials during high-velocity impact events." With A. Baumgarten,* N. Mitra, and R. Hurley.
51. Mach Conference, Towson, MD, April 2023: "High-throughput Characterization of Spall Strength of Niobium." With A. Zare* and J.M. Diamond.
52. Mach Conference, Towson, MD, April 2023: "Hypervelocity Impact in NASA's DART mission." With N. Mitra and S. Ghosh.*
53. Mach Conference, Towson, MD, April 2023: "Response of Bacteria Subjected to Extreme Dynamic Stresses." With L. Zhao,* C.A. Perez-Fernandez, and J. DiRuggiero.
54. Mach Conference, Towson, MD, April 2023: "Physics-Informed Data-Driven Constitutive Modeling of Strain Rate Sensitive Soft Tissues." With K. Upadhyay,* J.N. Fuhg, and N. Bouklas.

55. Military Health System Research Symposium, Kissimmee, FL, August 2023: "Effect of Human Head Shape on the Risk of Traumatic Brain Injury: A Gaussian Process Regression-Based Machine Learning Approach." With K. Upadhyay* et al.
56. Planetary Defense Conference, Vienna, Austria, April 2023: "3D Characterization of the Ejecta Produced by the DART Impact." Farnham* et al.
57. PDV Workshop, Santa Fe, NM, February 2023: ALPSS: A program for automated analysis of photonic Doppler velocimetry spall signals." With J.M. Diamond and S. Salander.
58. Photonics West, San Francisco, CA, February 2023: "Experimental demonstration of time lens photon Doppler velocimetry (TL-PDV)." With V. Kilic,* C. DiMarco, J.M. Diamond, P. Hu, Z. Wang, and M.A. Foster.
59. APS Shock Compression of Condensed Matter, Chicago, IL, June 2023: "High-throughput laser-driven micro-flyer spall failure studies of niobium." With A. Zare,* and J.M. Diamond.
60. APS Shock Compression of Condensed Matter, Chicago, IL, June 2023: "Using Uncertainty Quantification to Guide the Design of Ceramics Subjected to Hypervelocity Impact." With S. Braroo.*
61. APS Shock Compression of Condensed Matter, Chicago, IL, June 2023: "Spall failure of polycarbonate on nanosecond timescales." With J.M. Diamond.*
62. APS Shock Compression of Condensed Matter, Chicago, IL, June 2023: "Time-lens Photon Doppler Velocimetry (TL-PDV) for High Velocity Dynamic Range Experiments." With V. Kilic,* C. DiMarco, J.M. Diamond, P. Chu, Z. Wang, and M.A. Foster.
63. APS Shock Compression of Condensed Matter, Chicago, IL, June 2023: "A Mesoscale-Continuum Framework to Model the Acceleration of Laser-Driven Flyers." With A. Dongare,* C. Chen, and J.M. Diamond.
64. APS Shock Compression of Condensed Matter, Chicago, IL, June 2023: "Microstructure Dependence of Spall failure in Mg-Al alloys at Extreme Strain Rates." With D. Mallick,* C. DiMarco, and L. Kecskes.
65. Society for Experimental Mechanics, Orlando, FL, June 2023: "Physics-Informed Data-Driven Constitutive Modeling of Strain Rate Sensitive Soft Materials." With K. Upadhyay* et al.
66. Society for Experimental Mechanics, Orlando, FL, June 2023: "Hypervelocity impact experiments on binary Magnesium alloys." With J. Moreno* et al.
67. Society for Experimental Mechanics, Orlando, FL, June 2023: "Experimental and computational investigations of the dynamic failure processes in glass-ceramics." With L. Li, V. Kilic, and T. Hufnagel.
68. Society for Experimental Mechanics, Orlando, FL, June 2023: "High throughput Laser Shock Experiments and Open MSI." With C. DiMarco et al.
69. Society for Experimental Mechanics, Orlando, FL, June 2023: "Automated Data Analysis for High-throughput Laser-driven Micro-Flyer Experiments using Open MSIStream." With C. DiMarco et al.
70. SEMTA/MECAMAT Colloquium on Mechanics across the Scales, Toledo, Spain, October 2023. "The DART Mission and mechanics in the asteroid belt."
71. Annual Meeting of the Society of Engineering Science, Minneapolis, MN, October 2023: "Multiscale Uncertainty Quantification for Design of Engineering Ceramics under Extreme Loading

Conditions." With S. Braroo* and X. Sun.

72. Annual Meeting of TMS, San Diego, February 2023: "Evaluation of boron carbide's full elasticity tensor via thermal diffuse x-ray scattering." With A. Zare* et al.
73. International Conference on Advanced Ceramics and Composites, Daytona Beach, FL, January 2023: "A Mechanism-based Approach towards Improving the Impact Performance of Boron Carbide." With A. Zare* et al.
74. American Geophysical Union, December 2022: "Surface and Internal Properties of Didymos and Dimorphos from Fractures/Lineaments Analysis and Mass Movements/Wasting Processes." With Alice Lucchetti* et al.
75. American Geophysical Union, December 2022: "The Shape of Dimorphos, the Target Asteroid of the Double Asteroid Redirection Test (DART) Mission." With Terik Daly* et al.
76. American Geophysical Union Annual Meeting, Chicago, IL, December 2022: Influence of target strength heterogeneity on impact into an asteroid. With N. Mitra.*
77. Engineering Mechanics Institute Conference, Baltimore, MD, June 2022. "A Thermomechanical Framework for Modeling Fluid-Saturated, Brittle Granular Materials in High-Rate, Dynamic Flows." With A. Baumgarten* et al.
78. Engineering Mechanics Institute Conference, Baltimore, MD, June 2022. "Active learning sensitivity analysis for a visco-plastic sand breakage model." With D. Tsapetis* et al.
79. International Mechanical Engineering Congress and Exposition, November 2021: "Subject-specific 3D Brain Simulations Using Heterogenous, Linear Viscoelastic Material Properties Derived from Magnetic Resonance Elastography." With Ahmed Alshareef* et al.
80. International Mechanical Engineering Congress and Exposition, November 2021: "A two-dimensional subject-specific human head model based on the viscous dissipation- based visco-hyperelastic constitutive framework." With K. Upadhyay* et al.
81. Mach Conference, Annapolis, MD, April 2021: "Survival of Microorganisms Under Extreme Stresses." With Lily Zhao.*
82. Mach Conference, Annapolis, MD, April 2021: "Spall failure mechanisms of 7085 Aluminum alloy." With Chengyun Miao* et al.
83. Mach Conference, Annapolis, MD, April 2021: "Spall failure of Mg-6Al via laser-driven micro-flyer impact experiments." With Chris DiMarco* et al.
84. Mach Conference, Annapolis, MD, April 2021: "Observations of first contact and crater development during hyper-velocity impact." With YunHo Kim* et al.
85. Mach Conference, Annapolis, MD, April 2021: "Heterogenous Brittle Solids under High-Rate Compressive Loading." With Sakshi Braroo* et al.
86. Mach Conference, Annapolis, MD, April 2021: "The Effect of Fabric on Stability and Wave Propagation in Granular Media." With Adyota Gupta* et al.
87. Mach Conference, Annapolis, MD, April 2021: "Effects of Microstructure and Defect Distributions on the Dynamic Compressive Response of Hot-pressed Boron Carbide." With Arezoo Zare* et al.
88. Mach Conference, Annapolis, MD, April 2021: "Investigations of Anisotropy in the Mechanical Response of B4.9C Single Crystals and Characterization of Quasi-plasticity Mechanisms." With Arezoo Zare* et al.

89. Mach Conference, Annapolis, MD, April 2021: "Subject-specific 3D Brain Simulations Using Heterogenous, Linear Viscoelastic Material Properties Derived from Magnetic Resonance Elastography." With Ahmed Alshareef* et al.
90. 52nd Lunar and Planetary Sciences Conference, Virtual, March 2021: "Updated Calculations of Thermal Breakdown of Rocks on the Asteroids Bennu and Ryugu." Poster by high school student Vaidehi Joshi (HEMI Summer Intern).
91. US Association for Computational Mechanics Workshop, "New Trends and Open Challenges in Computational Mechanics: From Nano to Macroscale," March 2021: "An Ode to Scales: Fracture and Fatigue among the Asteroids." Invited.
92. APS Annual Meeting, Virtual, March 2021: "Inferring 3D Behavior of Dynamically Compressed Granular Materials from X-ray Tomography and Dynamic Radiography Measurements." With A. Gupta,* R. Crum, C. Zhai, K. T. Ramesh, R. C. Hurley.
93. 45th International Conference and Exposition on Advanced Ceramics and Composites, American Ceramic Society, Virtual, January 2021: "A Nanoindentation Study of Anisotropic Mechanical Properties of Boron Carbide Single Crystals." With A. Zare,* M.R. He, M. Straker, M. Spencer, J.W. McCauley, and K.J. Hemker.
94. 10th International Conference on Multiscale Materials Modeling, Virtual, October 2020: "The High-Strain-Rate Failure of Quasi-Brittle Solids."
95. Virtual SEM XIV International Congress, Sept. 2020: "Deformation and Failure of Single Crystal Boron Carbide." With A. Zare, M.R. He, M. Straker, M. Spencer, K. Hemker.
96. SES Virtual Technical Meeting, Sept. 2020: "Quantifying Mechanisms of Fragmentation in Granular Media."
97. 14th World Congress in Computational Mechanics, ECCOMAS Congress 2020, Virtual, July 2020: "A multi-mechanism constitutive model for the dynamic failure of quasi-brittle materials under impact loading."
98. TMS 2020 Annual Meeting and Exhibition, Feb. 2020: "Investigating the Effects of Ventricle Size on Brain Deformation using Computational Models." With A. Alshareef, A. Carass, A. Knutsen, M. Peters, and J. Prince.
99. 44th International Conference and Exposition on Advanced Ceramics and Composites, Daytona, FL, January 2020: "The Behavior of Advanced Ceramics in Extreme Dynamic Environments." Invited.
100. 44th International Conference and Exposition on Advanced Ceramics and Composites, Daytona, FL, January 2020: "Particle Size Effects on Dynamic Granular Flow of Boron Carbide." With X. Sun,* S. Chocron, and B. Yang.
101. 44th International Conference and Exposition on Advanced Ceramics and Composites, Daytona, FL, January 2020: "Quantifying Kinematics during High Strain Rate Loading of Granular Materials." With A. Gupta* and R. Hurley.
102. TMS Annual Meeting, San Antonio, TX, March 2019: "Cloud-Based Infrastructure for Big Data in the Materials Domain." With D. Elbert* et al.
103. SES Annual Meeting, St. Louis, October 2019: "Quantifying Kinematics During High-Strain-Rate Loading of Granular Materials." With A. Gupta* and R. Hurley.

104. SES Annual Meeting, St. Louis, October 2019: "The Mechanics of Traumatic Brain Injury in a Mouse Model." With C. Bradfield and L. Voo.
105. SES Annual Meeting, St. Louis, October 2019: "Fatigue and Fracture among the Asteroids." With Charles El Mir.
106. SES Annual Meeting, St. Louis, October 2019: "A Model for Amorphization in Boron Carbide." With Q. Zeng and A.L. Tonge. Invited.
107. SES Annual Meeting, St. Louis, October 2019: "Mechanism-based micromechanical modeling of deformation and failure of rock-like materials under dynamic multiaxial loading." With W. Li.*
108. Shock Compression of Condensed Matter, Portland, OR, June 2019: "Effect of Microstructure on the Dynamic Behavior of UHMWPE Composites." With J. Parker. *
109. Shock Compression of Condensed Matter, Portland, OR, June 2019: "On the Role of Texture and Precipitate Orientation in Spall Failure of a Rolled Magnesium Alloy." With D.D. Mallick* et al.
110. Shock Compression of Condensed Matter, Portland, OR, June 2019: "Quantitative x-ray phase contrast imaging during dynamic deformation and fracture." With T. Hufnagel* et al.
111. Shock Compression of Condensed Matter, Portland, OR, June 2019: "HyFIRE Hypervelocity Facility for Impact Research at Johns Hopkins University." With G. Simpson* & M. Shaeffer.
112. Shock Compression of Condensed Matter, Portland, OR, June 2019: "Shear Enhanced Dynamic Compaction of Granular Boron Carbide." With X. Sun.*
113. Summer Biomechanics, Bioengineering and Biotransport Conference, Seven Springs, PA, June 2019: "Development of a Computational Biomechanics Mouse Model for Traumatic Axonal Injury." With C. Bradfield* and L. Voo.
114. Ravichandran 60th Symposium, Pasadena, CA, June 2019: "Light, Dammed Light, and Statistics: Characterizing Spallation of Metals."
115. National Capital Area TBI Symposium, Bethesda, MD, March 2019: "Development of a Computational Biomechanics Mouse Model for Traumatic Axonal Injury." With C. Bradfield* and L. Voo.
116. Mach Conference, Annapolis, MD, April 2019: "Dynamic Granular Flow of Boron Carbide in Pressure Shear Plate Impact." With X. Sun* et al.
117. Mach Conference, Annapolis, MD, April 2019: "Laser Driven Flyers and Nanosecond Resolved Velocimetry for Spall Studies of AZ31B Mg Alloy." With D.D. Mallick * et al.
118. Materials Research Society Conference, Boston, MA, December 2019: "Effect of microstructure on spall void formation in magnesium." With H. Sheng* et al.
119. Lunar and Planetary Science Conference, Woodlands, TX, March 2019: "A Computational Approach to Modeling the DART Impact." With S. Braroo (poster).
120. Planetary Defense Conference, College Park, MD, April 2019: "Deflection of Potentially Hazardous Asteroids." With S. Braroo (poster).
121. International Workshop on Computational Mechanics of Materials, Dubrovnik, September 2019: "Crack Nucleation during the Dynamic Indentation of Glass." With M. Kang et al.
122. International Mechanical Engineering Conference and Exposition, Salt Lake City, UT, November 2019: "Integrated Materials Design for Extreme Environments." Invited.
123. International Glass Conference, Boston, MA, June 2019: "In Situ X-ray Phase Contrast Imaging of

Crack Evolution during Dynamic Indentation in Glass." With M. Kang* et al.

124. Hypervelocity Impact Society 2019, Destin, FL, April 2019: "Failure Modes of Protection Materials under Hypervelocity Impact with Laser Driven Flyers." With D.D. Mallick* et al.
125. Hypervelocity Impact Society 2019, Destin, FL, April 2019: "HyFIRE: Hypervelocity Facility for Impact Research Experiments." With G. Simpson* and M. Shaeffer.
126. 24th DYMAT Technical Meeting, Stresa, Italy, September 2019: "Thermal softening and rate sensitivity of bcc metals: experiments and mechanism-based modeling."
127. Dislocations 2019, Haifa, Israel, September 2019: Microstructural Origin of Work Hardening in FCC Cu Single Crystals." With W. Cai* et al.
128. 43rd International Conference and Exposition on Advanced Ceramics and Composites, Daytona, FL, January 2019: "A multi-mechanism-based constitutive model for the dynamic failure of boron carbide." With Q. Zeng* and A.L. Tonge.
129. 43rd International Conference and Exposition on Advanced Ceramics and Composites, Daytona, FL, January 2019: "Dynamic granular flow of boron carbide during pressure shear plate impact." With X. Sun.*
130. Aeroballistics Range Association, Marquette, WI, November 2019: "Commissioning HyFIRE: Installation and Initial Shots." With M. Shaeffer* and G. Simpson.
131. American Geophysical Union, Washington DC, December 2018: "Impact Simulations for the DART Mission Using a New Computational Approach." With Sakshi Braroo,* and Charles El Mir.
132. ASME International Mechanical Engineering Conference and Exposition, Pittsburgh, November 2018: "Nonlinear contact mechanics for the indentation of cellular cylindrical bodies." With Amy Dagro.*
133. 55th Annual Technical Meeting of the Society of Engineering Science, Madrid, October 2018: "An Extreme Arts Collaboration." With J. Gould* and V. Kannan.
134. Annual Technical Conference of the American Society for Composites, Seattle, WA, September 2018: "Effect of Consolidation Pressure on the Transverse Compressive Strength of UHMWPE Composites at High Strain-rates." With J. Parker. *
135. DYMAT Conference, Arcachon, France, September 2018: "A Model for the Dynamic Behavior of Geomaterials applied to Asteroid Impact Problems." With Charles El Mir and Q. Zeng.
136. World Congress on Biomechanics, Dublin, July 2018: "Arterial network impact on the brain response under inertial loading." With F. Madouh, * J. Glaister and J.L. Prince.
137. 4th Int. Congress on 3D Materials Science, July 2018: "Three-dimensional structure of deformation twins in magnesium." With T. Hufnagel, * H. Sheng, R. Shivaraman, V. Kannan.
138. US National Congress on Theoretical and Applied Mechanics, Chicago, IL, June 2018: "Development of a Mechanism-based Constitutive Model for the Dynamic Deformation of Geomaterials." With Q. Zeng, A. F. T Leong, N. P. Daphalapurkar, and T. C. Hufnagel.
139. US National Congress on Theoretical and Applied Mechanics, Chicago, IL, June 2018: "Mechanical Properties of Glial Cells and Implications for Homogenization Scales." With A. Dagro,* L. Rajbhandari, S. Orrego, S.-H. Kang, and A. Venkatesan.
140. US National Congress on Theoretical and Applied Mechanics, Chicago, IL, June 2018: "On Anisotropic Damage in Brittle Solids." With R.S. Ayyagari and N. P. Daphalapurkar.

141. US National Congress on Theoretical and Applied Mechanics, Chicago, IL, June 2018: "An impact acceleration animal model for mild traumatic brain injury." With R.S. Ayyagari and N. P. Daphalapurkar.
142. Annual Meeting of the Society for Experimental Mechanics, Greenville, SC, June 2018: "The effect of strain rate on plastic flow and failure of an AZ31B magnesium alloy." With V. Kannan* et al.
143. Annual Meeting of the Society for Experimental Mechanics, Greenville, SC, June 2018: "Dynamic spherical indentation of single crystal quartz with compression and torsion." With K. (Leonard) Andes.
144. Annual Meeting of the Society for Experimental Mechanics, Greenville, SC, June 2018: "In situ visualization of the dynamic failure of geomaterials using X-ray phase contrast imaging." With A.F.T. Leong et al.
145. Workshop on Catastrophic Disruption, Kobe, Japan, May 2018: "A New Hybrid Framework for Simulating Asteroid Impact Events: From Damage to Disruption and Gravitational Accumulation." With Charles El Mir,* Derek Richardson and Olivier Barnouin.
146. Mach Conference, Annapolis, MD, April 2018: "Quantifying geomaterial failure using X-ray phase contrast imaging." With A.F.T. Leong, T.C. Hufnagel, et al.
147. Mach Conference, Annapolis, MD, April 2018: "The deformation and failure mechanisms of a magnesium alloy." With M. Zhao, V. Kannan and C.L. Williams.
148. Mach Conference, Annapolis, MD, April 2018: "High strain rate multiaxial loading behavior of granular phase boron carbide." With X. Sun, A. Tonge, and J. LaSalvia.
149. Mach Conference, Annapolis, MD, April 2018: "Spherical indentation of single crystal quartz." With K. (Leonard) Andes.
150. Mach Conference, Annapolis, MD, April 2018: "Developing a hypervelocity facility at JHU." With M. Shaeffer, G. Simpson and D. Mallick.
151. Mach Conference, Annapolis, MD, April 2018: "The effect of strain rate on plastic flow and failure of an AZ31B magnesium alloy." With V. Kannan,* N. Krywopusk, X. Ma, L.J. Kecskes and T.P. Weihs.
152. Mach Conference, Annapolis, MD, April 2018: "Effect of microstructure on the transverse compressive strength of UHMWPE composites at high strain rates." With J. Parker.*
153. Mach Conference, Annapolis, MD, April 2018: "Head impact acceleration model of mild traumatic brain injury in mice." With J. Rosen* et al.
154. Lunar and Planetary Science Conference, Houston, TX, March 20, 2018: Hypervelocity Impacts onto Small Asteroids: Disruption Thresholds, Momentum Transfer, and the Effect of Rotating Targets." With C. El Mir,* D.C. Richardson and O. Barnouin.
155. TMS Annual Meeting, Phoenix, AZ, March 13, 2018: "Materials-by-design: a mechanism-based approach." Invited.
156. National Capital Area Traumatic Brain Injury Symposium, March 2018: "Investigation of Mild Head Impact using a Computational Brain Model developed by Material Point Method." With Y.C. Lu,* et al.
157. National Capital Area Traumatic Brain Injury Symposium, March 2018: "Quantification of the Mechanical Response of the Head for an Impact Acceleration Model of Mild Traumatic Brain

Injuries in Mice." With J. Rosen,* N. Ziogas and V. Koliatsos.

158. Mechanics/Materials Interface Conference, Coorg, India, Feb. 20, 2018: "Integrated multiscale materials design for extreme environments." Invited.
159. 42nd International Conference and Expo on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 22, 2018: "High Strain Rate Multiaxial Loading Behavior of Granular Phase Boron Carbide." With X. Sun, A. Tonge, J. LaSalvia.
160. International Mechanical Engineering Congress and Exposition, Tampa, FL Nov. 3, 2017: "The Effects of Vasculature Network on the Brain Response in mild TBI." With F.A. Madouh, J. Glaister, J.L. Prince.
161. International Mechanical Engineering Congress and Exposition, Tampa, FL Nov. 3, 2017: "Mechanical Properties of Glial Cells in a 3D Environment Using Optical Trapping." With A. Dagro, L. Rajbhandari, S. Orrego, S.H. Kang, A. Venkatesan.
162. Biomedical Engineering Society, Phoenix, AZ, Oct. 11, 2017. " Three-dimensional Human Brain Models under Mild Angular Acceleration using the Material Point Method." With Y.C. Lu, N. Daphalapurkar, A.K. Knutsen, D.L. Pham, P.V. Bayly, J.L. Prince.
163. The 68th Meeting of the Aeroballistic Range Association, Bath, England, Oct. 7, 2017. "Developing a Hypervelocity Impact Facility at Johns Hopkins University." With M. Shaeffer.
164. National Institute of Health Research Festival, Bethesda, MD, Sept. 13, 2017: "Importance of Falx Tentorium in Simulating Dynamic Deformations of Brain under Mild Angular Accelerations." With Y.C. Lu, J. Glaister, D.L. Pham, J.L. Prince, P.V. Bayly, N.P. Daphalapurkar.
165. Military Health System Research Symposium, Kissimmee, FL, Aug. 27, 2017: "Computational Head model for Biomechanical Simulations of Indirect Traumatic Optic Neuropathy." With N. Daphalapurkar, Y. Li, E. Singman, T. Nguyen, T. McCulley, D. Yousem.
166. Rod Clifton Symposium, Evanston, IL, Aug. 3, 2017: "Assessing and Responding to the Asteroid Impact Hazard."
167. Society of Engineering Science 54th Technical Meeting, Boston, MA, July 25, 2017: "High Strain Rate Behavior of Granular Phase Boron Carbide." With X. Sun, A. Tonge, J. LaSalvia.
168. Society of Engineering Science 54th Technical Meeting, Boston, MA, July 25, 2017: "The dynamics of twinning in single crystal Mg at high strain rates." With V. Kannan, K. Hazeli.
169. Society of Engineering Science 54th Technical Meeting, Boston, MA, July 25, 2017: "Mechanical properties of rolled AZ31B Magnesium at ultra-high strain rates." With M. Zhao, D. Mallick, M. Shaeffer.
170. Society of Engineering Science 54th Technical Meeting, Boston, MA, July 25, 2017: "Dynamic Spherical Indentation of Single Crystal Quartz with Compression and Torsion." With K. Leonard, M. Shaeffer.
171. Society of Engineering Science 54th Technical Meeting, Boston, MA, July 25, 2017: "A new hybrid numerical technique for the simulation of asteroidal impact events." With C. El Mir, D. Richardson.
172. 14th US National Congress on Computational Mechanics, Montreal, July 17, 2017: "Simulations of Harmonic Deformations in the Human Brain and Comparison with Measurements from Magnetic Resonance Elastography."
173. Summer Biomechanics, Bioengineering, and Biotransport Conference, Tucson, AZ, June 21, 2017:

"Development of a Head Impact Device for the Study of Indirect Traumatic Optic Neuropathy." With T. Ling, T. Nguyen.

174. Society for Experimental Mechanics, Indianapolis, IN, June 12-15, 2017: "Standards and the Kolsky Bar."
175. Society for Experimental Mechanics, Indianapolis, IN, June 12-15, 2017: "High strain rate behavior of granular phase boron carbide." With X. Sun, A. Tonge.
176. Society for Experimental Mechanics, Indianapolis, IN, June 12-15, 2017: "Twinning in Single Crystal Magnesium at High Strain Rates: Part I (Dynamics)." With V. Kannan,* K. Hazeli.
177. Society for Experimental Mechanics, Indianapolis, IN, June 12-15, 2017: "Rate Dependence of Hot Rolled AZ31B Magnesium Alloy." With M. Zhao,* V. Kannan.
178. Society for Experimental Mechanics, Indianapolis, IN, June 12-15, 2017: "Novel X-Ray Computed Tomography Techniques for Accessing Damage in Advanced Ceramics." With C. Lo, E. Krimsky, T. Walter, T. Sano,* J.D. Hogan.
179. Hypervelocity Impact Symposium, Canterbury, UK, April 24-28, 2017: "Using laser driven micro-flyers to study deformation mechanisms." With D. Mallick,* and M. Shaeffer.
180. Asteroids, Comets and Meteors 2017, Montevideo, Uruguay, April 10-14, 2017. "Thermal Fatigue on Small Airless Bodies." With C. El Mir and M. Delbo.
181. Mach Conference, Annapolis, MD, April 5-7, 2017. "Rate dependence and anisotropy of hot rolled AZ31B Mg alloy." With M. Zhao,* V. Kannan, Cyril Williams, and Laszlo Kecskes.
182. Mach Conference, Annapolis, MD, April 5-7, 2017. "Using Laser Driven Micro-Flyers to study Deformation Mechanisms." With D. Mallick* and M. Shaeffer.
183. Mach Conference, Annapolis, MD, April 5-7, 2017. "High-rate deformation behavior of a dual-phase Mg-Li alloy." With X. Ma, V. Kannan, L.J. Kecskes, and T.P. Weihs.
184. Lunar and Planetary Science Conference, Woodlands, TX, March 20-24, 2017. "A New Approach to Simulation of Asteroidal Impact Events: From Damage to Disruption and Gravitational Accumulation." With C. El Mir* and D. C. Richardson.
185. Lunar and Planetary Science Conference, Woodlands, TX, March 20-24, 2017. "The Venus oxygen fugacity experiment (V*f*Ox): Davinci's student collaboration experiment." With Noam R. Izenberg, Sarah M. Hörst, David R. B. Kraemer, Scott McGhee, Stergios J. Papadakis, and Lori S. Glaze. Poster.
186. 42nd International Conference and Expo on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 23-27, 2017. "Phase contrast X-ray imaging: a new tool to study fracture." With A.F.T. Leong,* A.K. Robinson, M. Motamedi, N. Daphalapurkar, and T.C. Hufnagel.
187. 42nd International Conference and Expo on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 23-27, 2017. "Dynamic Failure of Damaged Advanced Ceramics." With C. Lo, E. Krimsky,* T. Walter, T. Sano, B.E. Schuster, K.T. Ramesh, J.D. Hogan.
188. Materials Research Society, Boston, MA, Nov. 27-30, 2016. "Materials under Extreme Conditions."
189. Materials Research Society, Boston, MA, Nov. 27-30, 2016. "X-ray phase-contrast imaging studies of crack propagation in ceramics during dynamic deformation." With A.F.T. Leong, A.K. Robinson, K. Fezzaa, T. Sun, B.E. Schuster, D.T. Casem, P.K. Lambert, and T.C. Hufnagel*
190. International Mechanical Engineering Conference and Exposition, ASME, Phoenix, AZ, Nov. 14-18,

2016. "Direct Experimental Measures of Dynamic Twin Boundary Propagation." With V. Kannan & K. Hazeli.

191. International Mechanical Engineering Conference and Exposition, ASME, Phoenix, AZ, Nov. 14-18, 2016. "Modeling anisotropic damage evolution in flaw-sensitive brittle materials under compressive loading." With R.S. Ayyagari and N. Daphalapurkar.*

192. Lunar Exploration Assessment Group, Laurel, MD, Nov. 2, 2016. "Thermal Fatigue on Small Bodies." With Charles El Mir.

193. MS&T Conference, Salt Lake City, UT, Oct. 24-26, 2016. "Materials Data Integration in HEMI, MEDE and IDIES." With Tamas Budavari & Alex Szalay.

194. Division of Planetary Sciences/European Planetary Science Congress, Pasadena, CA, Oct. 19-21, 2016. "A scaling analysis for thermal fragmentation on small airless bodies." With Charles El Mir.

195. Society of Engineering Science, College Park, MD, Sept. 3-5, 2016. "Network mechanics in biological materials: bond dissociations and network measures of damage." With Amy Dagro.

196. Society of Engineering Science, College Park, MD, Sept. 3-5, 2016. "Photon Doppler Velocimetry in Plate Impact Experiments on Magnesium." With D. Mallick, M. Zhao, and B.E. Schuster.

197. Society of Engineering Science, College Park, MD, Sept. 3-5, 2016. "Damage Precursors and Fatigue Life Prediction in Heterogeneous Solids: Thermal Fatigue on Asteroids." With K. Hazeli and C. El Mir.

198. Society of Engineering Science, College Park, MD, Sept. 3-5, 2016. "The roles of white matter shear anisotropy and vasculature in mild TBI." With F. Madouh.

199. Society of Engineering Science, College Park, MD, Sept. 3-5, 2016. "X-ray phase-contrast imaging studies of dynamic fracture in geological materials." With A. Leong, A. Robinson, K. Fezzaa, T. Sun, B.E. Schuster, D.T. Casem, P.K. Lambert, and T.C. Hufnagel.

200. Society of Engineering Science, College Park, MD, Sept. 3-5, 2016. "Strength and Strain Localization in an AZ31B Magnesium Alloy: Strain Rate Effects." With V. Kannan, N. Krywopusk, T.P. Weihs, and D.T. Casem.

201. Geological Society of America, Denver, CO, Sept. 27-28, 2016. "Impact, Fracture and Fragmentation." Invited.

202. 17th International Conference on Experimental Mechanics, Rhodes, Greece, July 1-8, 2016. "Fibrillar network mechanics and brain injury." With Amy Dagro, L. Rajbhandari and A. Venkatesan.

203. 17th International Conference on Experimental Mechanics, Rhodes, Greece, July 1-8, 2016. "Dynamic Plasticity in the Mg Alloy AZ31B." With M. Zhao, V. Kannan, N. Krywopusk, T.P. Weihs, L. Kecskes and C. Williams.

204. IUTAM Symposium on Integrated Computational Structure-Materials Modeling under Extreme Conditions, Baltimore, MD, June 20-22, 2016. "The Secret Lives of Twins – Part II."

205. 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.

206. 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.

207. 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.
208. 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.
209. 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.
210. 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.
211. 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.
212. 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.
213. Mach Conference, Annapolis, MD, April 6-8, 2016. "Pressure Shear Response of Rolled AZ31B Magnesium Alloy." With M. Zhao.
214. 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.
215. 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.
216. 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.
217. 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.
218. Mach Conference, Annapolis, MD, April 6-8, 2016. "Constitutive Model for White Matter to Capture the Brain's Shearing Response." With F. Madouh.
219. 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.
220. 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.
221. 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.

222. 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.
223. 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.
224. 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.
225. 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.
226. 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.
227. 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.
228. 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.
229. MRS Meeting, Boston, MA, Nov. 29 - Dec. 4, 2015. "Microstructural Characterization of <a>-axis Mg Single Crystals Subjected to Normal Plate Impact." With K. Xie, K. Hazeli, N. Dixit, and K. Hemker.
230. 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.
231. International Mechanical Engineering Conference & Exposition, Houston, TX, Nov. 2015. "Twinning in single crystal magnesium under microsecond impact loading." With Neha Dixit and Lukasz Farbaniec.
232. 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.
233. 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.
234. 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.

235. Society for Experimental Mechanics 2015 Conference and Exposition, Costa Mesa, CA, June 2015. "The Hopkins Extreme Materials Institute."
236. 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.
237. 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.
238. 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.
239. 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.
240. 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.
241. 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.
242. Mach Conference, Annapolis, MD, April 8-10, 2015. "Dynamic Response of AZ31B Magnesium under Pressure-Shear." With M. Zhao and R.S. Ayyagari.
243. 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.
244. 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.
245. 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.
246. Mach Conference, Annapolis, MD, April 8-10, 2015. "Brittle Beam Fracture and the Transient Flexural Waves Released from the Fracture Point." With F. Zhou.
247. 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.
248. 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.
249. 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.
250. 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.
251. 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.

252. 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.
253. 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.*
254. 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.
255. 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.
256. 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.
257. 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.
258. 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.
259. 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.
260. 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.
261. Society of Engineering Science Annual Technical Meeting, West Lafayette, IN, Oct. 1-3, 2014. "A Microstructurally Informed Dynamic Ductile Failure Model." With J. Wilkerson.
262. 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.
263. 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.
264. 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.
265. 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.

266. 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.
267. 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.
268. 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.
269. 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.
270. 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.
271. 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.
272. 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.
273. 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.
274. 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.
275. 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.
276. 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.
277. 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.
278. 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.
279. 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
280. 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.

281. Mach Conference, Annapolis, MD, April 9-11, 2014. "Insights from a new micromechanics based dynamic damage model for boron carbide." With A.L. Tonge.
282. 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.
283. Mach Conference, Annapolis, MD, April 9-11, 2014. "Stability of Ideal FCC Twin Boundaries." With T.W. Wright and N. Daphalapurkar.
284. Mach Conference, Annapolis, MD, April 9-11, 2014. "The Effect of Microstructure on Advanced Ceramic Compressive Fragmentation." With J.D. Hogan and N. Daphalapurkar.
285. 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.
286. 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.
287. Mach Conference, Annapolis, MD, April 9-11, 2014. "The Mechanical Behavior of Magnesium Alloys at Very High Strain Rates." With V. Kannan.
288. 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.
289. 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.
290. 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.
291. 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.
292. 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.
293. 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.
294. 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.
295. MRS Symposium ZZ: Nanostructured Materials in Extreme Environments, Boston, MA, Dec. 1-6, 2013. "Deformation and failure of nanostructured metals under extreme conditions."
296. 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.

297. 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.
298. 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.
299. 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.
300. 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.
301. 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.
302. 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.
303. 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.
304. Society of Engineering Science 50th Annual Technical Meeting, Providence, RI, July 28-31, 2013. "The Consequences of Impact on Asteroids."
305. Society of Engineering Science 50th Annual Technical Meeting, Providence, RI, July 28-31, 2013. "The Dynamics of Brain Injury."
306. 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.
307. 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.
308. 2013 Joint APS-SCCM/AIRAPT Conference, Seattle, WA, July 7-12, 2013. "High rate deformation and failure mechanisms in brittle materials."
309. ASME 2013 Summer Bioengineering Conference, Sunriver, OR, June 26-29, 2013. "Computational Model of the Eye for Primary Blast Injury." With T.D. Nguyen.
310. 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.
311. Catastrophic Disruption 8, Hawaii, June 24-27, 2013. "Mechanisms and Models of Fragmentation."
312. 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.
313. 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.

314. 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.
315. 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.
316. 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.
317. Mach Conference, Baltimore, MD, April 10-12, 2013. "Anisotropy in hardness in Hexagonal SiC single crystals." With K.E. Prasad. (Poster)
318. 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
319. Mach Conference, Baltimore, MD, April 10-12, 2013. "Dynamic Experiments for Dummies (with Apologies)."
320. 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.
321. Mach Conference, Baltimore, MD, April 10-12, 2013. "High strain rate compression of brittle materials: boron carbide and basalt." With A.M. Stickle.
322. Mach Conference, Baltimore, MD, April 10-12, 2013. "Inelastic Polarization Behavior of Monocrystalline Quartz Orientations." With L. Lamberson and J. McCauley.
323. Mach Conference, Baltimore, MD, April 10-12, 2013. "Physics-based scale bridging in armor ceramics." With A.L. Tonge.
324. 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.
325. 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.
326. 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.
327. Lunar and Planetary Science Conference, The Woodlands, TX, March 18-22, 2013. "Impact Damage on Eros." With A.L. Tonge and O.S. Barnouin.
328. 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.
329. International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 28-Feb. 1, 2013. "Armor Ceramics in Extreme Dynamic Environments." Invited.
330. 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.

331. 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.
332. 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.
333. 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.
334. 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.
335. 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.
336. 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.
337. Materials in Extreme Dynamic Environments Fall Meeting, Baltimore, MD, Oct 17-19, 2012. "Physics-based Dynamic Damage Models for Armor Ceramics."
338. Materials in Extreme Dynamic Environments Fall Meeting, Baltimore, MD, Oct 17-19, 2012. "TEM Characterization of Dislocation Structure in Magnesium." With K. Hemker
339. Materials in Extreme Dynamic Environments Fall Meeting, Baltimore, MD, Oct 17-19, 2012. "High Strain Rate Characterization of Magnesium and Its Alloys."
340. Materials in Extreme Dynamic Environments Fall Meeting, Baltimore, MD, Oct 17-19, 2012. "In Situ Visualization in Kolsky Bar Experiments."
341. Materials in Extreme Dynamic Environments Fall Meeting, Baltimore, MD, Oct 17-19, 2012. "TEM Characterization of Boron Carbide." With K. Hemker
342. Society of Engineering Science, Atlanta, GA, Oct. 10-12, 2012. "A Micromechanics Based Damage Model Applied to Asteroid Impacts." With A.L. Tonge.*
343. 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.
344. Society of Engineering Science, Atlanta, GA, Oct. 10-12, 2012. "Twin Boundary Motion in Pure Magnesium." With N. Dixit.*
345. Society of Engineering Science, Atlanta, GA, Oct. 10-12, 2012. "Micromechanics of Neuronal Compression." With A. Fournier.*
346. Society for Experimental Mechanics, Costa Mesa, CA, Jun 11-14, 2012. "Early stage damage propagation in hypervelocity impacts on brittle materials." With J. Kimberley.*
347. 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.
348. Society for Experimental Mechanics, Costa Mesa, CA, Jun 11-14, 2012. "Deformation twinning in

pure magnesium at high strain rates." With N. Dixit.*

349. Society for Experimental Mechanics, Costa Mesa, CA, Jun 11-14, 2012. "Damage and the Electromechanical Behavior of Piezoelectric Ceramics." With L. Lamberson* & G. Gazonas.
350. 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.*
351. 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.
352. TMS Annual Meeting, Orlando, FL, Mar. 11-15, 2012. "A Model for Diffuse Axonal Injury."
353. 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.
354. 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.
355. 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.
356. 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.
357. 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.
358. 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.
359. 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.*
360. 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.
361. 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.
362. 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.*
363. 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.*
364. ASME International Mechanical Engineering Conference & Exposition, Houston, TX, Nov. 9-15, 2012. "The Dynamic Failure of Geophysical Materials."

365. 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.*
366. International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, Jan. 22-27, 2012. "From Mechanisms to Materials: Armor Ceramics." Invited.
367. 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.
368. 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.
369. 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.*
370. 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.
371. 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.
372. 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.
373. Society for Experimental Mechanics, Uncasville, CT, June 13-16, 2011, "Understanding Damage Growth Under Global Compression." With A.L. Tonge and J. Kimberley.
374. 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.
375. Society for Experimental Mechanics, Uncasville, CT, June 13-16, 2011, "Electrical-Mechanical Response of Dynamically Loaded Piezoelectric Materials." With L. Lamberson.*
376. 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.
377. 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*.
378. 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.
379. 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*.
380. 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*.

381. 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.
382. TMS Annual Meeting and Exposition, San Diego, CA, Feb. 27- March 3, 2011, "Partial Dislocation Nucleation and Twinning in Aluminum." With N.P. Daphalapurkar*.
383. 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*.
384. 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.
385. 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.
386. 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.
387. 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.
388. 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.
389. MS&T 2010, Houston, TX, October 17-21, 2010, "The High-Strain-Rate Behavior of Heterogeneous Materials: Experiments and Models." Invited.
390. MS&T 2010, Houston, TX, October 17-21, 2010, "Partial Dislocations and Deformation Twinning in Aluminum." With N. Daphalapurkar* and B. Cao.
391. 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.
392. 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.
393. 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.
394. 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.*
395. 47th Sagamore Army Materials Conference, St. Michaels, MD June 14-19, 2010. "The High-Strain-

Rate Behavior and Dynamic Failure of Lightweight Metals."

396. 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.
397. Army Aluminum Armor Workshop, Baltimore, MD, May 2010: "The Strengthening of Aluminum: Strain Rate and Grain Size Effects." Invited.
398. ICCES - International Conference on Computational and Experimental Engineering and Sciences, Las Vegas, NV, Mar. 28 – Apr. 4, 2010, "The Dynamics of Nanomaterials." Invited Keynote.
399. 41st LPSC, The Woodlands, TX, March 1-5, 2010, "A normalized model describing the compressive strength of geologic materials." With J. Kimberley.
400. 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.
401. 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.
402. 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.
403. TMS Annual Meeting and Exposition, Seattle, WA, Feb. 14-18, 2010, "UFG Aluminum Alloy Tested in Dynamic High Temperature Compression." With E.L. Huskins.
404. 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.
405. 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.
406. 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.
407. 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.
408. 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.
409. 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.
410. 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.
411. 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.

412. APS Shock Compression of Condensed Matter, June 28 – July 3, 2009, "Length Scales and Nanomaterials."
413. 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.
414. Summer BioEngineering Conference, Lake Tahoe, CA, June 17-21, 2009. "Application of Diffusion Tensor Imaging in Modeling Diffuse Axonal Injury." With Rika Wright.
415. SEM, Albuquerque, NM, June 1-3, 2009, "Microcompression Experiments on Single Crystal Magnesium." With C. Byer.
416. SEM, Albuquerque, NM, June 1-3, 2009, "Uniaxial and confined dynamic compression of Aluminum Nitride." With Guangli Hu, J.W. McCauley and Buyang Cao.
417. 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.
418. SEM, Albuquerque, NM, June 1-3, 2009, "Failure of quartz crystals under dynamic compression." With J. Kimberley.
419. SEM, Albuquerque, NM, June 1-3, 2009, "Deformation Mechanisms of Aluminum Alloy under High Temperature Dynamic Loading." With E. Huskins.
420. 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.
421. 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.
422. 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*.
423. IUTAM Symposium on Dynamic Fracture & Fragmentation, Austin, TX, Mar. 8-11, 2009. "The Processes of Massive Dynamic Failure."
424. TMS 2009, San Francisco, CA. February 2009. "A statistical view of high-rate material instability and failure." With T.W. Wright*.
425. TMS 2009, San Francisco, CA. February 2009. "Dislocations and Their Configurations in Mg and Mg Alloys." With B. Li* and E. Ma.
426. TMS 2009, San Francisco, CA. February 2009. "Length-scale Dependent Failure of Hierarchical Composites." With S.P. Joshi.
427. 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.
428. 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*.
429. 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.
430. 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.

431. 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.
432. ASME International Mechanical Congress & Exposition, Boston, MA. October 2008: Internal Rupture in a Viscoplastic Solid. With T.W. Wright.
433. 2nd Biennial IEEE/RAS-EMBS International Conference on Biomedical Robotics and Biomechatronics, Scottsdale, AZ. October 2008: With S. Misra, K. Reed, A. Douglas, A. Okamura.
434. 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.
435. 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.
436. ASME 2008 Summer Bioengineering Conference, Marco Island, FL, June 2008: Anisotropic Modeling of Fibrous White Matter. With *Rika Wright.
437. 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.
438. Dynamic Void Growth in a Viscoplastic Material, New Models and Hydrocodes, Lisbon, May 2008. With T.W. Wright.
439. 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.
440. 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.
441. 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.
442. 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.
443. 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.
444. 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.
445. International Conference on Multiscale Modeling and Simulation (ICMMS), Bangalore, India, January 2008: Modeling Massive Dynamic Failure Processes. Invited.
446. 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.

447. 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.
448. 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.
449. 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.
450. 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.
451. 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.
452. 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.
453. International Conference on Experimental Mechanics, Alexandropoulos, Greece, July 2007: Instabilities in Nanostructured Materials. With S.P. Joshi, B.E. Schuster.
454. 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.
455. 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.*
456. 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.*
457. 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.
458. 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.
459. 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.
460. World Haptics Conference, Tsukuba, Japan, 2007: Force Feedback is Noticeably Different for Linear versus Nonlinear Elastic Tissue Models. With Sarthak Misra* & Allison M. Okamura.
461. Annual Meeting of TMS, Orlando, 2007: A Mechanistic Model for Shear Bands in Nanostructured Materials. With Shailendra Joshi. *Invited*.
462. Annual Meeting of TMS, Orlando, 2007: Techniques for the Measurement of the High-Strain-Rate

Deformations of Materials. *Invited*.

463. Annual Meeting of TMS, Orlando, 2007: The High-Strain-Rate Deformations of Structural and Nanocrystalline Metals. With K. J. Hemker & E. Ma. *Invited*.
464. Annual Meeting of TMS, Orlando, 2007: Plastic Processes Leading to Damage and Failure. With T.W. Wright*. *Invited*.
465. Annual Meeting of TMS, Orlando, 2007: Rate Dependent Behavior of Ultrafine Grained Magnesium Alloy. With Azevedo, K, Joshi, SP and Ma, E.
466. 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.
467. 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.
468. 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.*
469. 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.
470. 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.
471. 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.
472. 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.
473. ASME International Mechanical Engineering Conference and Exposition, Chicago, Nov. 2006: A Mechanistic Model for Plastic Instabilities in Nanostructured Materials. With S.P. Joshi.
474. ASME International Mechanical Engineering Conference and Exposition, Chicago, Nov. 2006: Modeling the compressive brittle failure mechanism. With B. Paliwal.
475. 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.
476. 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.
477. 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.
478. DYMAT, Dijon, France, Sept. 2006: A New Ductile Spall Model Based on Dynamics of Void Growth. With T.W. Wright.
479. 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.

480. 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.
481. 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.
482. 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.
483. 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.
484. 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.
485. TMS Annual Meeting, San Antonio, March 2006: Remarkable Dynamic Mechanical Properties of a "Trimodal" Al 5083/B_4C Composite. With H. Zhang, S.P. Joshi, J. Ye, J. M. Schoenung & E.S.C. Chin.
486. 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.
487. Keynote Lecture, International Conference on Computational and Experimental Sciences, Chennai, Dec. 1-6, 2005: The Mechanical Behavior and Dynamic Failure of Nanometals and Nanoceramics.
488. 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.
489. Materials Research Society, Boston, Dec. 2005. Microcompression of nanocrystalline and amorphous materials. With Q. Wei, B. E. Schuster, H. Zhang.
490. 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.
491. 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.
492. ASME International Mechanical Engineering Conference and Exposition, Orlando, Nov. 6-11, 2005. Dynamic Failure of Ceramics. With B. Paliwal*, J.W. McCauley & P. Patel.
493. 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.
494. Hypervelocity Impact Symposium, Lake Tahoe, Sept. 2005: An Elastic-Visco-Plastic Analysis of the Expanding Ring. With F. Zhou* & J.F. Molinari.
495. APS Shock Physics Conference, Baltimore, 2005: Status of Statistical Modeling for Damage from Nucleation and Growth of Voids. With T.W. Wright.*
496. 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.

497. APS Shock Physics Conference, Baltimore, 2005: Void Nucleation and Growth in Shocked Materials. With T.W. Wright and A. Molinari.
498. American Ceramic Society, Baltimore, 2005: Dynamic failure of AlON under uniaxial and biaxial compression. With B. Paliwal,* J.W. McCauley & P.J. Patel.
499. 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.
500. 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.*
501. 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.
502. 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.
503. 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.
504. ASME IMECE, Symposium on High Rate Behavior of Ductile Materials, Anaheim, November 2004: "The Very High Strain Rate Behavior of Metals."
505. ASME IMECE, Symposium on High Rate Behavior of Ductile Materials, Anaheim, November 2004: "A Model for Dynamic Fragmentation." With J.F. Molinari* & F. Zhou.
506. 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.*
507. TMS Materials Science and Technology Conference 2004, New Orleans, September 2004: "A Model for the High Strain Rate Response of BCC Metals."
508. 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.
509. Society for Experimental Mechanics, Costa Mesa, June 2004: "The Behavior of Aluminum Alloys at High Strain Rates."
510. 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.
511. 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.
512. 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.
513. 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.

514. 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.
515. ASME International Mechanical Engineering Congress & Exposition, Washington, D.C., November 16-21, 2003. "Dynamic Failure and Damage Mechanisms in Multiphase Materials," (invited).
516. 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.
517. 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.
518. 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.
519. 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
520. 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.
521. 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.
522. 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.
523. 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.
524. 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.
525. 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.
526. 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.
527. 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.
528. 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.

529. 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.
530. 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.
531. 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.
532. 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.
533. 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."
534. International Conference on Theoretical and Applied Mechanics, Chicago, Aug. 2000: "Dynamic Response of Uniaxial Continuous Fiber-Reinforced Metal Matrix Composites," with Li & Chin.
535. Symposium on Biologically Inspired Materials, Society of Experimental Mechanics, Orlando, June 2000: "Constitutive Response of Active Polymer Gels," with Marra & Douglas. Invited.
536. ASME International Mechanical Engineering Congress and Exposition, Orlando, Nov. 2000. "Impact Response of FGM Structures," with Li and Chin. Invited.
537. 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.
538. Symposium on Electroactive Polymers, Materials Research Society, Boston, Dec. 1999. "Constitutive Response of Active Polymer Gels," with Marra & Douglas. Presented by S. P. Marra.
539. ASME International Mechanical Engineering Congress and Exposition, Nashville, Nov. 1999. "Deformation and Failure of Nanostructured Iron," with Jia and Ma.
540. ASME International Mechanical Engineering Congress and Exposition, Nashville, Nov. 1999. "Void Nucleation and Growth within Adiabatic Shear Bands."
541. Fall Meeting of TMS, Cincinnati, Oct. 1999. "Observations and Modeling of Dynamic Compressive Damage in Metal Matrix Composites," with Li & Chin.
542. 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.
543. 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.
544. ASME Mechanics & Materials Conference, Blacksburg, VA, June 1999: "Determination of the Viscoplastic Behavior of Materials in Tension," with Li. Presented by Y. Li.
545. ASME Mechanics & Materials Conference, Blacksburg, VA, June 1999: "Shear Localization in BCC Materials," with A.M. Lennon.
546. ASME Mechanics & Materials Conference, Blacksburg, VA, June 1999: "Applications of the Kolsky Bar to the Study of Liquids, Powders and Amorphous Solids."

547. 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.
548. SPIE Smart Materials & Structures Conference, Newport Beach, CA, March 1999: "Mechanical Properties of active PolyAcryloNitrile Gels" with Marra & Douglas. Presented by S.P. Marra.
549. International Symposium on Advances in Twinning, San Diego, March 1999: "The Influence of Deformation Twinning on the Mechanical Response of □-Titanium." Invited.
550. ASME International Mechanical Engineering Congress and Exposition, Anaheim, CA, November 1998: "Dynamic Characterization of a Layered Structure," with Y. Li. Invited.
551. 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.
552. 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.
553. 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.
554. 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.
555. 1998 Annual Meeting of the Society of Engineering Science, Pullman, WA, September 1998: "Mechanical Properties of Tungsten-Silica Composites," with D. Jia.
556. 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.
557. National Congress on Theoretical and Applied Mechanics, Gainesville, FL, July 1998: "Adiabatic Shear Localization in BCC Metals: Polycrystalline Vanadium," with A.M. Lennon. Invited.
558. 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.
559. National Congress on Theoretical and Applied Mechanics, Gainesville, FL, July 1998: "Thermal Softening in Compression at High Strain Rates," with A.M. Lennon.
560. 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.
561. SPIE Smart Materials & Structures Conference, San Diego, CA, March 1998: "The Mechanical and Electromechanical Properties of a 0-3 Ca-modified $PbTiO_3$/P(VDF-TrFE) Composite." Presented by S.P. Marra.
562. 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.

563. 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.
564. ASME Summer Meeting, Applied Mechanics Division, Evanston, IL, June 1997: "Shearing Failures in Hafnium, Titanium and Titanium Alloys." Presented by S. Yadav. Invited.
565. 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.
566. 1997 Annual Meeting of the Society of Rheology, Galveston, TX, March 1997: "The Strength and Compressibility of Liquids." Invited.
567. 1997 SPIE Smart Materials & Structures Conference, San Diego, CA, February 1997: "The Mechanical Properties of Compliant Piezoelectric Composites." Presented by S.P. Marra.
568. 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."
569. 1996 ASME Mechanics & Materials Conference, Baltimore, MD, June 1996: "Deformation Mechanisms and High-Strain-Rate Behavior of Alpha-Titanium." Presented by D.R. Chichili.
570. 1996 ASME Mechanics & Materials Conference, Baltimore, MD, June 1996: "Dynamic Compaction and Shear of Particulate Materials." Presented by C.A. Collins.
571. The Society of Engineering Science, New Orleans, LA, October 1995: "Finite Deformations and the Dynamic Measurement of Radial Strains in Compression Kolsky Bar Experiments."
572. 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.
573. 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."
574. International Conference on Tungsten & Refractory Metals, McLean VA, October 1995: "Mechanical Properties of Polycrystalline Tungsten." Presented by A.M. Lennon.
575. 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.
576. ASME International Mechanical Engineering Congress & Exposition, Chicago, IL, November 1994: "High Strain Rate Deformation Mechanisms in Alpha Titanium." Presented by D.R. Chichili.
577. International Conference on Tungsten & Refractory Metals, McLean, VA, October 1994: "High Strain Rate Deformations in Tungsten Single Crystals." Presented by E. Horwath.
578. International Conference on Tungsten & Refractory Metals, McLean, VA, October 1994: "The High Strain Rate Behavior of Tungsten-Based Composites." Presented by S. Yadav.
579. 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.
580. Symposium on Dynamic Behavior of Materials, TMS-ASM Meeting, Cleveland, OH, October 1994:

"Dynamic Behavior of a Metal-Matrix Composite." Invited.

581. Symposium on Dynamic Behavior of Materials, TMS-ASM Meeting, October 1994: "High Strain Rate Pressure-Shear Experiments on a Tungsten-Based Composite."
582. Symposium on Dynamic Failure Mechanics, SES Annual Meeting, College Station, TX, October 1994: "Dynamic Failure Mechanisms in a Metal-Matrix Composite."
583. Twelfth U.S. National Congress of Theoretical and Applied Mechanics, Seattle, WA, June 1994: "Inhomogeneous Shear Flow and Localization in High-Rate Rheometry."
584. Twelfth U.S. National Congress of Theoretical and Applied Mechanics, Seattle, June 1994: "EHD Lubricant Behavior at Moderate Pressures and High Shear Rates."
585. Twelfth U.S. National Congress of Theoretical and Applied Mechanics, Seattle, June 1994: "Dynamic Behavior of Porous Iron: Experiments and Modeling."
586. 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.
587. Winter Annual Meeting of the ASME, New Orleans, November 1993: "Smart Structures with Applications to Soft Robots."
588. TMS Fall Meeting, Chicago, October 1993: "The Deformation and Fracture of Tungsten-Based Composites."
589. International Symposium on Plasticity and its Applications, Baltimore, July 1993: "The Deformation and Failure of Tungsten-Based Composites."
590. International Symposium on Plasticity and its Applications, July 1993: "The Rate-Dependent Deformations of Porous Iron." Invited.
591. Army Symposium on Solid Mechanics, Aug. 1993: "The Deformation and Failure of Tungsten-Based Composites."
592. Army Symposium on Solid Mechanics, Aug. 1993: "Microstructural Influences on the Deformation and Failure of Tungsten Heavy Alloys."
593. The Society of Engineering Science, Charlottesville, June 1993: "Damage and Recovery Experiments Using Pressure-Shear Plate Impact."
594. Annual Meeting of The Metallurgical Society, Denver, CO, Feb. 1993: "The Deformation and Failure of Porous Iron."
595. Annual Meeting of The Metallurgical Society, Denver, CO, Feb. 1993: "The Dynamic Deformation of an Aluminum/Alumina Composite."
596. International Conference on Tungsten and its Alloys, Washington, DC, Nov. 1992: "Shear Localization in a Tungsten Heavy Alloy."
597. Winter Annual Meeting of the ASME, Anaheim, Nov. 1992: "Finite Deformation Analysis of Pressure-Shear Plate Impact Experiments on Elastohydrodynamic Lubricants."
598. Annual ASME/STLE Tribology Conference, San Diego, CA, Oct. 1992: "The Rheology of Lubricants at High Shear Rates."
599. The Society of Engineering Science, La Jolla, Sept. 1992: "Shear Localization in Tungsten Heavy Alloys."
600. The Society of Engineering Science, La Jolla, Sept. 1992: "The Effect of Porosity on Shearing

Instabilities in a Titanium Alloy."

601. The Society of Engineering Science, La Jolla, Sept. 1992: "Shear Localization in EHD Lubricants."
602. International Conference on Titanium and its Alloys, San Diego, July 1992: "The Effect of Porosity on the Viscoplastic Response of Sintered Ti-6Al-4V."
603. NSF Design & Manufacturing Conference, Atlanta, Jan. 1992: "Constitutive Models for Porous Metals at High Rates of Deformation."
604. Winter Annual Meeting of the ASME, Atlanta, Dec. 1991: "The Effect of Porosity on the Plastic Response of Metals at High Rates of Deformation."
605. Annual Meeting of the Society of Engineering Science, Gainesville, Nov. 1991: "The Dynamic Shearing of Elastohydrodynamic Lubricants."
606. Annual Meeting of the Society of Engineering Science, Gainesville, Nov. 1991: "Viscoplastic Deformations and Shear Localization in Tungsten Heavy Alloys."
607. Annual Meeting of the Society of Engineering Science, Gainesville, Nov. 1991: "Constitutive Models for Porous Metals deformed at High Rates."
608. 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.
609. International Conference on the Dynamic Behavior of Materials, Strasbourg, France, Oct. 1991: "Dynamic Behavior of Elastohydrodynamic Lubricants in Shearing and Compression."
610. International Conference on the Dynamic Behavior of Materials, Strasbourg, France, Oct. 1991: "The Constitutive Modeling of Porous Metals at High Rates of Deformation."
611. 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.
612. NSF Design & Manufacturing Conference, Austin, Jan. 1991: "Constitutive Models for Porous Metals."
613. 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."
614. International Conference on Shock-Wave and High-Strain-Rate Phenomena in Materials, La Jolla, Aug90: "The Deformation of Tungsten Alloys at High Strain Rates."
615. Eleventh U.S. National Congress of Applied Mechanics, Tucson, May 1990: "Finite Deformation Analysis of Pressure-Shear Plate Impact Experiments on Elastohydrodynamic Lubricants."
616. Eleventh U.S. National Congress of Applied Mechanics, Tucson, May 1990: "The Viscoplastic Deformation of Tungsten Alloys."
617. Annual ASME/STLE Joint Tribology Conference, Fort Lauderdale, 1989: "On the Rheology of a Traction Fluid."
618. 26th Annual Meeting of the Society of Engineering Science, Ann Arbor, 1989: "The Micromechanics of the Rate Dependent Deformation of a Sintered Tungsten Alloy."
619. Seventh International Conference on Fracture, Houston, 1989: "Failure Modes and Mechanisms in Cermets under Stress-Wave Loading."
620. Annual Review of Progress in QNDE, La Jolla, 1988: "An Ultrasonic Evaluation of Damage in

Cermets."

621. 24th Annual Meeting of the Society of Engineering Science, Salt Lake City, 1987: "On the Pressure-Dependent Viscoplastic Deformation of an Amorphous Solid."
622. Tenth U.S. National Congress of Applied Mechanics, Austin, 1986: "The Rheology of EHD Lubricants at High Pressures and High Shear Rates."
623. Annual Meeting of the American Physical Society, Providence, 1985: "Rheology of Lubricants at High Pressures and High Shear Rates."

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.

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) 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)
Spring 2017	530.215 Mechanics-Based Design (Undergraduate)
Fall 2017	530.748 Waves, Impacts and Shocks (Graduate) 530.605 Mechanics of Solids and Materials I (Graduate)
Spring 2018	530.215 Mechanics-Based Design (Undergraduate)
Fall 2018	530.732 Fracture Mechanics (Graduate)
Spring 2020	530.748 Waves, Impacts and Shocks (Graduate)
Spring 2024	530.748 Waves, Impacts and Shocks (Graduate)

Supervision of Graduate Students, Postdocs and Visitors

Doctoral Students (13 Industry, 11 National Lab, 14 Academia):

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	MFA Financial	1996
4	Y. Zhang	Lubricant Rheology: Experiments and Molecular Modeling	BGI Corp	1997

5	D.R. Chichili	Fundamental Studies in Adiabatic Shear Localization	Wind Point Partners	1997
6	A.M. Lennon	High-Rate Deformations and Adiabatic Shear Bands in BCC Metals	Applied Physics Laboratory	1998
7	S. Bilyk	The Interaction of Finite Deformations and Large Electric Currents in Metals	Army Research Laboratory	2006 (DNF)
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 rate behavior and dynamic failure of MMCs	Schlumberger	2005
13	B.E. Schuster	Microcompression of Nanostructured and Amorphous Materials	University of Texas at El Paso	2008
14	B. Paliwal	Dynamic Failure of Brittle Materials	Rensselaer Polytechnic Institute	2008
15	R. Kraft	Computational Simulations of Brittle Failure	Pennsylvania State University	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.L. Williams	Experimental Studies of Spallation	Army Research Laboratory	2012
21	G. Hu	Failure Mechanisms of Ceramics	Merck	2012
22	C. Byer	Deformation Mechanisms of Mg	Institute for Defense Analyses	2013
23	A. Tonge	A modeling framework for dynamic failure of brittle materials	Army Research Laboratory	2014
24	A. Fournier	Mechanics of Neural Axons	PEO Soldier (US Army)	2014
25	J. Wilkerson	Multiscale mechanisms in extreme environments	Texas A&M University	2014
26	N. Dixit	Deformation Twinning Dynamics	Google	2015
27	F. Madouh	Traumatic Brain Injury	Kuwait University	2018
28	C. El Mir	Impact and Regolith on asteroids	St. Louis University, Madrid	2018
29	V. Kannan	Plastic Deformation and Failure of Mg and Mg Alloys at High Rates	Ecole Polytechnique	2018

30	A. Dagro	Mechanical Properties of Glial Cells	Army Research Laboratory	2019
31	M. Zhao	Pressure Shear Plate Impact on Mg	Vanguard	2019
32	D. Mallick	Laser-Flyer Experiments	Army Research Laboratory	2019
33	X. Sun	Dynamics of Granular Materials	Corning	2021
34	J. Parker	The Dynamics of Composites	CCDC Soldier Center, Natick	2021
35	C. Bradfield	A Mouse Model for TBI	JH Applied Physics Lab	2022
36	G. Simpson	Hypervelocity Impact	Los Alamos National Lab	2023
37	A. Gupta	Models for dynamic granular flow	Exponent	2024
38	S. Braroo	Constitutive models for brittle solids	Southwest Research Institute	2024
39	Lily Zhao	Planetary Protection	Johns Hopkins University	Current
40	J. Diamond	Laser shock in polymers	Johns Hopkins University	Current
41	Jiahao Wei	Modeling Brain Injury	Johns Hopkins University	Current
42	K. Muly	Impact behavior of ceramics	Johns Hopkins University	Current
43	M. Le	Planetary impact	Johns Hopkins University	Current
44	L. Rackers	Hypersonic ceramics	Johns Hopkins University	Current
45	K. Balakrishnan	ML modeling of hypervelocity impact	Johns Hopkins University	Current

Master's Degrees Awarded:

No.	Student	Research Topic	NEXT 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	Exponent	1992
4	J. A. Davis	A Recovery Technique for Pressure-Shear Plate Impact Experiments	NIST	1993
5	S. Yadav	The Dynamic Behavior of a 6061-T6 Al/Al_2O_3 Metal-Matrix Composite	MFA Financial	1994
6	Y. Zhang	EHD Lubricant Behavior at Moderate Pressures and High Shear Rates	BGI 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 Brain Tissues	Princeton University	2007
18	P. McPhee	Wave Propagation in the Brain	KEMA	2007
19	R. Yatnalkar	Ocular Blast Injury	Amazon Labs	2012
20	T. Nguyen	Crystal Plasticity of BCC Metals	Univ. 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
24	J. Rosen	A Mouse Model for TBI	Johns Hopkins University	2018
25	K. Leonard	Amorphization in Ceramics	STX	2019
26	Peter Lim	Hypervelocity impact	Lockheed Martin	2022

Postdoctoral Fellows (13 Industry, 7 National Lab, 27 Academia)

1. Dr. Chenyang Li, current postdoc
2. Dr. Arjun Sreedhar, current postdoc
3. Dr. Piyush Wanchoo, current postdoc
4. Dr. Lei Yang, current postdoc
5. Dr. Ahmad Mirzaei, UC Irvine
6. Prof. Liuchi Li, Princeton University
7. Dr. Aaron Baumgarten, Johns Hopkins Applied Physics laboratory
8. Prof. Arezoo Zare, Washington State University
9. Dr. Christopher DiMarco, Sindri Materials
10. Prof. Ahmed Alshareef, University of South Carolina
11. Prof. Kshitiz Upadhyay, Louisiana State University
12. Dr. Pinkesh Malhotra, Apple
13. Dr. Xiangyu Sun, Corning
14. Dr. Chengyun Miao, Lam Research
15. Prof. Yunho Kim, Seoul National University
16. Dr. Minju Kang, Novelis
17. Dr. Weixin Li, Apple
18. Prof. Qinglei Zeng, Beijing Institute of Technology
19. Dr. Andrew Fwutay Leong, Los Alamos National Laboratory
20. Dr. Yuan-Chiao Lu, NIH
21. Prof. Hosein Motamedi, Rowan University
22. Prof. Kavan Hazeli, University of Arizona
23. Prof. Shailesh Ganpule, Indian Institute of Technology, Roorkee
24. Prof. Ravi Sastri Ayyagari, Indian Institute of Technology, Gandhinagar
25. Dr. Lukasz Farbaniec, Oxford University, UK
26. Prof. James Hogan, University of Alberta, CA
27. Prof. Sarah Bentil, Iowa State University

28. Dr. Tuan Hoang (Vietnam)
29. Dr. Angela Stickle, Johns Hopkins Applied Physics Laboratory
30. Dr. Dhirendra Kubair, Assistant Research Scientist, Johns Hopkins University
31. Prof. Eswar Prasad Korimilli, Indian Institute of Technology, Indore, India
32. Prof. Leslie Lamberson, Colorado School of Mines
33. Dr. Changqiang Chen, Research Scientist at University of Illinois, Urbana
34. Dr. Nitin Daphalapurkar, Los Alamos National Laboratory
35. Prof. Jamie Kimberley, Elizabeth College
36. Dr. Swapnil Patil, General Electric Research
37. Prof. Krishna Jonnalagadda, Indian Institute of Technology, Bombay
38. Dr. Brandon McWilliams, Army Research Laboratory
39. Prof. Bin Li, University of Nevada-Reno
40. Dr. George Zhang, consulting in Boston, MA
41. Dr. Cang Fan, University of Tennessee, Knoxville
42. Dr. Buyang Cao, scientist at Caterpillar, NY
43. Prof. Shailendra Joshi, University of Houston
44. Dr. Hong Wang, Oakridge National Laboratory
45. Dr. Haitao Zhang, Schlumberger, Texas.
46. Dr. Tong (Tonia) Jiao, Research Engineer, Saint Gobain
47. Prof. Fenghua Zhou, Professor, Ningbo University, China
48. Prof. Qiuming Wei, Professor, UNC-Charlotte
49. Dr. Li-Qian Xing, Washington University in St. Louis
50. Prof. Yulong Li, Professor, Northwestern Polytechnical University, China
51. Dr. Ji-Bin Yang, Rockwell Dynamics

Supervision of Undergraduate Research

1. Arveen Singh, JHU ME, laser shock
2. Joshua Sic, JHU ME, laser shock
3. Bowen Zheng, JHU ME, laser shock
4. Aaron Lefkowitz, JHU ME, spall characterization
5. Kalysha Wong, JHU ME, astrobiology
6. Joel Rentas-Velez, JHU ME, spall characterization
7. Mason Holmes, JHU ME, dynamics of ceramics
8. Sean Lezcanu, JHU ME, laser shock
9. Samuel Salander, JHU ME, laser shock
10. Gopika Pillai, UPitt, brain injury
11. Kyle Fisher, JHU ME, fracture

12. Kevin Hu, JHU ME, ceramics at high rates
13. Ari Miller, JHU ME, multi-point PDV system development
14. Nathaniel Davenport, JHU ME, laser shock
15. Roshan Jagani, UC Berkeley, modeling of TBI
16. Gavin Mackay, JHU ME, spall failure of bulk metallic glasses
17. Angela Torrejon, laser shock
18. Elizabeth Hsieh, JHU ME, impact on ceramics
19. Irena Lian, high-rate experiments on metals
20. Jack Albin, JHU ME, specimen preparation for high rate tests
21. Jonah Offman, high-speed photography
22. Angela Groszos, Kolsky bar experiments
23. Raymundo Muro Barrios, UIUC MSE, mouse experiments
24. Sumita Rajpurohit, JHU ME, mouse TBI experiments
25. Dan Zanko, JHU ME, mechanical design of fixtures
26. Katie McElhanie, JHU MSE, magnesium experiments
27. Miranda Grenville, JHU ME, high rate data sharing
28. Alex Doran, JHU ME, impact simulations
29. Orezuwa Adesina, Morgan State undergraduate, big data
30. Elizabeth Konopacki, JHU ME, indirect traumatic optic neuropathy
31. Elaine Asare, JHU ME, behavior of quartz
32. Rachel Rex, JHU ME, dynamic fracture of rocks.
33. Seth Izen, Maryland Institute College of Art undergraduate, animation of fragmentation
34. Josh Samba, Morgan State undergraduate, laser shock experiments
35. Frank Waggoner, ME, eye injury
36. Raph Santore, ME, rock materials
37. Jorge Rivera, ME, biomechanics
38. Erez Krimsky, ME, fragmentation of ceramics
39. Daniel Tabas, ME, spall of metals
40. Geordan Gutow, ME, impact on ceramics
41. William Wagers, ME, mechanical design, high rate experiments on geological materials
42. Dmitriy Katz, ME, impact experiments and fragmentation on ice
43. Joseph Hajj, ME, high strain rate fragmentation on brittle materials
44. Andrew Cerruzi, ME, impact experiments on magnesium
45. Nicole Cade-Ferreira, ME, high rate experiments
46. Jack Riley, ME, mechanical design and high rate experiments
47. Aman Shah, ME, mechanical design and experimental biomechanics
48. Noah Dennis, ME, mechanical design and high rate experiments

49. Shing Shin Cheng, ME, high rate experiments and computational biomechanics
50. Ben Schiffman, Philosophy, fracture processes
51. Chris Price, ME, mechanical design
52. Albert Chen, ME, design of biomechanical devices
53. Dan Cadel, ME, shock tube design
54. India Jones, NCA&T ME, dynamic testing
55. Logan Shannahan, ME, dynamic behavior of magnesium
56. Alex Strachan, ME, computational research assistant
57. Christian Murphy, ME, general lab assistance
58. Scott Hoffman, ME, mechanical design
59. Amy Dagro, BME, design of biomechanical devices
60. Alejandro De Simone, ME, general lab assistance
61. Debjoy Mallick, BME, computations of microstructures
62. Ben Pressman, ME, layered structures
63. Taig Rajpal, ME, ceramics and glasses
64. Douglas Karlsberg, ME, nanoaluminum
65. Omar Almagri, ME, magnesium behavior
66. Brian Woodworth, ME, general lab assistance
67. Adam Friedman, ME, general lab assistance
68. Scott Decker, BME, brain tissue properties
69. Patrick Brandon, ME, nano-micro aluminum composites
70. Kyle Azevedo, ME, nanomagnesium
71. Alek Koenig, ME, optics, photography and tungsten-glass composites.
72. Chris Kovalchick, ME, working on simulations of impact
73. Diana Kim, BME, working on the low-frequency response of brain tissue
74. Bernard Shin, BME, brain injury
75. James Wu, BME, working on the penetration of needles into hyperelastic membranes
76. Sam Olesky, ME, working on the dynamic failure of glass.
77. Laura Manofsky, ME, working on brain impact experiments and simulations
78. Sairam Subramaniam, ME, provided general assistance in the laboratory.
79. Rebeca Mercado, BME, worked on penetration of needles into rubber
80. Soohong Park, ME, provided general assistance in the laboratory.
81. Omar Irizarry, ME, provided assistance with optics and photography.
82. Tristan Flanzer, ME, provided general assistance in the laboratory.
83. Philip Tsang, BME, worked with Carmelita Frondoza and me on chondrocytes.
84. Gautam Jadhav, ME junior, spent an academic year working on the dynamic failure of ceramics.
85. Sam Martin, ME Senior, worked on the high-rate deformations of high hard steel.

86. Sam Feldman, a high school senior, spent a summer working on high-speed photography.
87. Wade Johannesen, a BME Senior, viscoelastic properties of soft tissues and AlloDerm.
88. Alastair Valentine, a Mech. Eng. Freshman, provided assistance with specimen preparation.
89. Serena Leung, a Mech. Eng. Senior, provided assistance with specimen preparation and machining.
90. Keith Carlton, a Mech. Eng. Junior, fractoluminescence in ice.
91. Kristy Hsiao, a Mech. Eng. Senior, spent the spring working on imaging and motion control.
92. Chris Gemmiti, a Biomedical Engineer, design and development of a biaxial testing device.
93. Sanae Kubota, a Mech. Eng. junior, specimen preparation (now a system engineer at APL).
94. Isaac Weingrod, a Mech. Eng. junior, worked on specimen preparation, microstructural analysis.
95. Robert Mills, a BME undergrad, the mechanical properties of plant tissue.
96. Chris Betsher, a Mech. Eng. senior, provided general assistance in the laboratory.
97. Charles Bartisch, a BME senior, provided general assistance in the lab.
98. John Garmon, a Mech. Eng. senior, optical measurement of dynamic axial strains.
99. Kevin Capinpin, a Mech. Eng. junior, provided support with pressure-shear plate impact facility.
100. Sudarshan Narasimhan, a Mech. Eng. senior, dynamic radial measurements during compression.
101. Naida Zecevic, a sophomore at Western Maryland, general lab assistance.
102. Louis Jauvtis, a Mech. Eng. freshman, provided general laboratory support.
103. Jack Buchanan, a Mech. Eng. senior, worked on dynamic behavior of tantalum.
104. Laurence Chun, a Mech. Eng. senior, worked on the dynamic behavior of titanium and tantalum.
105. Richard Millhiser, a Mech. Eng. senior, worked on microscopy, and microstructural evaluation.
106. Heather Riordan, a Mech. Eng. junior, developed data reduction procedures.
107. Stephen Chong, a Mech. Eng. senior, worked on the quasistatic deformation of titanium alloys.
108. Alexander Motamed, a Mech. Eng. senior, compressibility of EHD lubricants, titanium alloys.
109. Yuri Achille, a BioMed freshman, worked on specimen preparation and microstructural evaluation.
110. Gauri Gavankar, a Physics sophomore, developed data reduction procedures.

Supervision of High School Research

1. Sai Divvela, phase field modeling codes
2. Vaidehi Joshi, Houston, thermal fatigue on asteroids
3. Taylor Beverly, REAP fellow, amorphization
4. Jack Phelps, Mt. St. Joseph's HS, mechanical properties of materials
5. Steven Hu, Centennial HS, granular flow
6. Montese Hall, Baltimore Poly HS, failure of magnesium
7. Anna Pizzano, REAP fellow, Elizabeth Seton HS, mechanics of dental materials
8. Shawn Abraham, REAP fellow, Eleanor Roosevelt HS, dental materials
9. Michael Stromberg, Mt. St. Joseph's HS, mechanical properties of materials
10. Marissa Kokinis, Garrison Forest HS, biomechanics (WISE)

11. Alison Baratta, Garrison Forest HS, optical tweezers in network mechanics (WISE)
12. Jeffrey Rodgers, Mt. St. Joseph's HS, failure of polymers for helmets
13. Kevin Peters, Gilman HS, now an undergrad in ME at JHU
14. Lane Easterling, Baltimore Polytechnic HS, ice fragmentation and evolution in Saturn's rings
15. Jay Dunning, a Gilman High School senior on his way to Princeton as an engineering freshman.
16. Jay Pavanal, Mt. St. Joseph HS, impact mechanics
17. Ty Green, Gilman HS, ceramic behavior
18. Wesley Baire, Gilman HS, fragmentation of basalt, optical ray tracing
19. Meng-meng Wang, Garrison Forest HS, tissue mechanics (WISE)
20. Danh Nguyen, Baltimore Polytechnic HS, high strain rate behavior of 2139 aluminum

Mentorship of Research Scientists & Visitors

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

PROFESSIONAL SOCIETIES

American Society of Mechanical Engineers
Society for Experimental Mechanics
US Association for Computational Mechanics
American Academy of Mechanics
American Association for the Advancement of Science

Society of Engineering Science
The Metals, Minerals and Materials Society (TMS)
The Materials Research Society
American Ceramic Society
American Society for Engineering Education
American Physical Society
American Geophysical Union
American Astronomical Society

SELECTED PROFESSIONAL SERVICE

To the Scientific and Professional Communities:

- Developed Extreme Science Internships and Scholars program with Morgan State University
- Developed Extreme Arts Program with Maryland Institute College of Art (Baltimore, MD)
- Chair, Departmental Advisory Committee, Mechanical and Aerospace Eng. Dept., IIT Hyderabad
- Section Editor, Applied Mechanics Reviews, 2013-2015
- Editorial Advisory Board, Journal of Dynamic Behavior of Materials
- Editorial Advisory Board, International Journal of Impact Engineering
- Editorial Board, Materials Research Letters
- Editorial Board, Strain
- 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 (selected): Science, Nature, Journal of Applied Mechanics, Icarus, Journal of the Mechanics and Physics of Solids, Journal of Geophysical Research, 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, 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 (engineering, materials, physics, geosciences)

- Reviewer, U.S. Army Research Office, Office of Naval Research, AFOSR, DoE, …
- NSF Think-Tank on the Role of Experimentalists in Mechanics, 1996
- Chair, Technical Committee on Dynamic Response of Materials, ASME Applied Mechanics, 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
- Chair/Vice-Chair, numerous Conference Sessions (ASME, TMS, SES, SEM)
- Symposium Organizer/Co-Chair, various symposia (ASME, SES, SEM, TMS)
- 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.

To the Department, School and University:

- Established the Johns Hopkins Data Science and AI Institute
- Established AI-X, later absorbed into the Data Science and AI Institute
- Directed faculty development of AI strategy for Johns Hopkins
- Senior Advisor (AI) to the President, Johns Hopkins
- Founding Director, Hopkins Extreme Materials Institute, 2012-2023
- Johns Hopkins University Provost Search Committee, 2012
- Elected to Johns Hopkins University Academic Council, 2010 – 2013
- Search Committee for Director of JHU Biomedical Engineering
- Director, Center for Materials in Extreme Dynamic Environments, 2012 -
- Director, Center for Advanced Metallic and Ceramic Systems, 2001- 2015
- Chair, Department of Mechanical Engineering, 1999 – 2002
- Chair, Whiting School of Engineering International Affairs Advisory Committee
- Chair, EP (Engineering for Professionals), Mechanical Engineering
- Chair, Faculty Search Committees, Mechanical Engineering
- Chair, Industrial Relations, Mechanical Engineering
- All major ME Departmental Committees
- Advisor, ME Classes of 1993, 1998, 2002, 2007, 2011, 2016
- Member, Whiting School Strategic Planning Advisory Council
- Member, Executive Committee of Center for Non-Destructive Evaluation (CNDE)
- Member, Faculty Advisory Committee to the Sheridan Libraries
- Elected by undergraduates: Faculty Representative, Hopkins Undergraduate Academic Ethics Board
- Graduate Board Orals, Thesis Defenses (Physics, BME, ME, MS&E, ECE, 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 Universities
- 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.