Archival Journal Articles

Hassan Aref

1. H. Aref, "Point vortex dynamics – a classical mathematics playground." *Journal of Mathematical Physics* **48**, 065401 (2007) 23 pp. (invited paper)
2. H. Aref, M. Brøns, and M. A. Stremler, "Bifurcation and instability problems in vortex wakes." *Journal of Physics: Conference Series* **64**, 012015 (2007)
3. H. Aref, S. Hutzler, and D. Weaire, "Toying with Physics." *EuroPhysics* News **38**(3), 23-26 (2007)
4. H. Aref, "A note on the energy of relative equilibria of point vortices." *Physics of Fluids* **19**, 103603 (2007) 7 pp.

Romesh C. Batra

5. R. C. Batra, M. Porfiri and D. Spinello, Free and Forced Vibrations of a Segmented Bar by a Meshless Local Petrov-Galerkin (MLPG) Formulation, *Computational Mechanics*, **41**, 473-491, 2008.
6. N.M. Hassan and R.C. Batra, Modeling Damage in Polymeric Composites, *Composites B*, **39**, 66-82, 2008.
7. Z. G. Wei and R. C. Batra, Damage Model for Anisotropic Materials and its application to Analysis of Stability and Spallation, *Int. J. Impact Eng'g.*, **34**, 1780-1796, 2007.
8. R. C. Batra and G. M. Zhang, Search Algorithm, and Simulation of Elastodynamic Crack Propagation by Modified Smoothed Particle Hydrodynamics (MSPH) Method, *Computationa\Mechanics*, **40**, 531-546, 2007.
9. A. Ferreira, C. Roque, G. Fasshauer, R. Jorge and R. Batra, Analysis of Functionally Graded Plates by a Robust Meshless Method, *Mechanics of Advanced Materials and Structures*, **14**, 577-587, 2007.
10. J. R. Xiao, D. F. Gilhooley, R. C. Batra, J. W. Gillespie Jr. and M. A. McCarthy, Analysis of Thick Composite Laminates Using a Higher-order Shear and Normal Deformable Plate Theory (HOSNDPT) and a Meshless Method, *Composites B*, **39**, 414-427, 2008.
11. R. C. Batra, M. Porfiri and D. Spinello, Vibrations of Narrow Microbeams Predeformed by an Electric Field, *J. of Sound and Vibration*, **309**, 600-612, 2008.
12. R. C. Batra and S. Aimmanee, Vibration of an Incompressible Isotropic Linear Elastic Rectangular Plate with a Higher Order Shear and Normal Deformable Theory, *J. of Sound and Vibration*, **296**, 961-971, 2007.
13. R. C. Batra and N. M. Hassan, Blast Resistance of Unidirectional Fiber Reinforced Composites, *Composites B*, **39**, 513-536, 2008.
14. R. C. Batra and S. Romano, Failure of Dynamically Loaded Thermoelastoviscoplastic Rectangular Plate, *AIAA J*, **45**:8, 2015-2023, 2007.
15. M. C. Ray and R. C. Batra, Vertically Reinforced 1-3 Piezoelectric Composites for Active Damping of Functionally Graded Plates, *AIAA J*, **45**:7, 1779-1783, 2007.
16. B. Klenow, A. Nisewonger, R. C. Batra and A. Brown, Reflection and Transmission of Plane Waves at an Interface Between Two Fluids, *Computers and Fluids*, **36**, 1298-1306, 2007.
17. G. M. Zhang, R. C. Batra and J. Zheng, Effect of Frame Size, Frame Type, and Clamping Pressure on the Ballistic Performance of Soft Body Armor, *Composites B*, **39**, 476-489, 2008.

18. R. C. Batra and A. Sears, Continuum Models of Multi-walled Carbon Nanotubes, *Int. J. Solids and Structures*, **44**, 7577-7596, 2007.
19. D.F. Gilhooley, J.R. Xiao, R.C. Batra, M.A. McCarthy, J.W. Gillespie, Jr., Two-dimensional Stress Analysis of Functionally Graded Solids using the MLPG Method with Radial Basis Functions, *Computational Material Science*, **41**, 467-481, 2008.
20. R.C. Batra and G.M. Zhang, SSPH Basis Functions for Meshless Methods, and Comparison of Solutions with Strong and Weak Formulations, *Computational Mechanics*, **41**, 527-545, 2008.
21. R. C. Batra, Higher-order Shear and Normal Deformable Theory for Functionally Graded Incompressible Linear Elastic Plates, *Thin-Walled Structures*, **45**, 974-982, 2007.
22. M. C. Ray and R. C. Batra, Single-Walled Carbon Nanotube Reinforced 1-3 Piezoelectric Composite for Active Control of Smart Structures, *Smart Materials and Structures*, **16**, 1936-1947, 2007.
23. M. C. Batra and A. Sears, Uniform Radial Expansion/Contraction of Carbon Nanotubes and Their Transverse Elastic Moduli, *Modelling and Simulation in Materials Sciences and Engineering*, **15**, 835-844, 2007.
24. R. C. Batra and G. M. Zhang, Modified Smoothed Particle Hydrodynamics (MSPH) Basis Functions for Meshless Methods, and Their Application to Axisymmetric Taylor Impact Test, *J. of Computational Physics*, **227**, 1962-1981, 2008.
25. R. C. Batra, M. Porfiri and D. Spinello, Effects of van der Waals Force and Thermal Stresses on Pull-in Instability of Clamped Rectangular Microplates, *Sensors*, **8**, 1048-1069, 2008.
26. R. C. Batra, M. Porfiri and D. Spinello, Reduced-order Models for Microelectromechanical Rectangular and Circular Plates Incorporating the Casimir Force, *Int. J. Solids and Structures*, **45**, 3558-3583, 2008.

Scott Case

27. S.E. Boyd, J.V. Bausano, S.W. Case, and J.J. Lesko, "Compression Creep Rupture Behavior of a Glass/Vinyl Ester Composite Subject to Isothermal and One-sided Heat Flux Conditions," *Composites Part A: Applied Science and Manufacturing*, **38** (2007), pp. 1462–1472.
28. S.E. Boyd, J.J. Lesko, and S.W. Case, "Compression Creep Rupture Behavior of a Glass/Vinyl Ester Composite Laminate Subject to Fire Loading Conditions." *Composites Science and Technology*, **67**(15-16), December 2007, pp. 3187-3195.
29. N.L. Post, J. Cain, K.J. McDonald, S.W. Case, J.J. Lesko, (2008), "Residual Strength Prediction of Composite Materials: Random Spectrum Loading." *Engineering Fracture Mechanics*, **75**, 2707–2724.

Raffaella DeVita

30. De Vita, R., Stewart, I. W., Leo, D. J., "Pressure effects on the equilibrium configurations of bilayer lipid membranes," Journal of Physics A: Mathematical and Theoretical, **40**: 13179-13196, 2007.

David Dillard

31. R. H. Plaut, H. Lohse-Busch, A. Eckstein, S. Lambrecht, and D. A. Dillard, "Analysis of Tapered, Adhesively Bonded, Insulated Rail Joints", Journal of Rail and Rapid Transit, **221**, 2007, 195-204.
32. S. Park, D. A. Dillard, "Development of a simple mixed-mode fracture test and the resulting fracture energy envelope for an adhesive bond", Int. J. Fracture, **148**, 2007, 261-271.
33. H. Yang, W. Zhang, R. D. Moffitt, T. C. Ward, and D. A. Dillard, "Multi-layer in-situ for evaluation of dynamic mechanical properties of pressure sensitive adhesives", International Journal of Adhesion and Adhesives, **27**, 2007, 536-546.
34. D. J. Pohlit, D. A. Dillard, G. C. Jacob, and J. M. Starbuck, "Evaluating the Rate-Dependent Fracture Toughness of an Automotive Adhesive", The Journal of Adhesion, **84** (2), 2008, 143-163.

John Grant

35. J. H. Nam, J. R. Cotton, and J. W. Grant, "The virtual hair cell: I. Addition of gating spring theory into a 3-D bundle mechanical model." *Biophysical J*, **92**, pp. 1918-1928, 2007.
36. J. H. Nam, J. R. Cotton, and J. W. Grant, "The virtual hair cell: II. Evaluation of mechanoelectric transduction parameters." *Biophysical J*, **92**, pp. 1929-1937, 2007.
37. J. L. Davis, J. Xue, E. H. Peterson, and J. W. Grant, "Layer thickness and curvature effects on utricle deformation in the red ear slider turtle: Static and modal analysis." *J. Vestibular Research*, in press, 2008.

Muhammad Hajj

38. H. W. Tieleman, M. A. K. Elsayed and M. R. Hajj, Closure to "Peak Wind Load Comparison: Theoretical Estimates and ASCE 7," ASCE Journal of Structural Engineering, *J. Struct. Engrg.* **133**, 1485 (2007).

Michael Hyer

39. Sun, M. and M.W. Hyer, "Use of Material Tailoring to Improve Buckling Capacity of Elliptical Composite Cylinders," *AIAA J*., vol. 46, no. 3, 770-82, 2008.

Ronald Kriz

40. Arun K. Nair, Edward Parker, Peter Gaudreau, Diana Farkas and Ronald Kriz, "Size Effects in Indentation Response of Thin Films at the Nanoscale." Accepted To appear, *International Journal of Plasticity*, 2008.

John Lesko

41. S. E. Boyd, J. V. Bausano, S. W. Case, and J. J. Lesko, "Compression Creep Rupture Behavior of a Glass/Vinyl Ester Composite Subject to Isothermal and One-sided Heat Flux Conditions," *Composites Part A: Applied Science and Manufacturing*, **38**, pp. 1462-1472, 2007.
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43. N. L. Post, J. Cain, K. J. McDonald, S. W. Case, and J. J. Lesko, "Residual Strength Prediction of Composite Materials: Random Spectrum Loading." *Engineering Fracture Mechanics*, **75**, 2707-2724, 2008.
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45. Z. Liu, P. K. Majumdar, T. E. Cousins, and J. J. Lesko, "Development and Evaluation of an Adhesively-bonded Panel-to-panel Joint for an FRP Bridge Deck System." *Journal of Composites for Construction*, v 12, n 2, pp. 224-233, 2008.

Michael Madigan

46. S. Kim, M. A. Nussbaum, and M. L. Madigan, "Direct parameterization of postural stability during quiet upright stance: Effects of age and altered sensory conditions." *Journal of Biomechanics*, **41**(2): 406-11, 2008.
47. X. Qu, M. A. Nussbaum, and M. L. Madigan, "A balance control model of quiet upright stance based on an optimal control strategy." *Journal of Biomechanics*, **40**(16): 3590-97, 2007.
48. D. E. Anderson, M. L. Madigan, and M. A. Nussbaum, "Maximum voluntary joint torque as a function of joint angle and angular velocity: Model development and application to the lower limb." *Journal of Biomechanics*, **40**(14): 3105-13, 2007.
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Roop Mahajan

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51. K. Ramadurai, C.L. Cromer, X. Li, R.L. Mahajan, J.H. Lehman, "Foam-Based Optical Absorber for High-Power Laser Radiometry", *Applied Optics*, **46**(34), pp. 8268-8271, November 26, 2007.

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54. G. Singh, P. Rice, K. Hurst, J. Lehman, and R, K, Mahajan, R.L., "Laser-induced exfoliation of amorphous carbon layer on an individual multiwall carbon nanotube", *Applied Physics Letters*, **91**, 033101, July 16, 2007.
55. C.P. Malhotra, and R.L. Mahajan, (2007), "High Knudsen Number Physical Vapor Deposition: Predicting Deposition Rates and Uniformity", accepted for publication, *ASME J. Heat Transfer*; **129** (11); 1546-1553.
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Ali Nayfeh

57. P. Malatkar and A. H. Nayfeh, "Steady-State Dynamics of a Linear Structure Weakly Coupled to an Essentially Nonlinear Oscillator." *Nonlinear Dynamics Special Issue in Honor of the 60th Birthday of Professor G. Rega*, vol **47**, pp. 167-179, 2007.
58. G. W. Vogl and A. H. Nayfeh, "Primary Resonance Excitation of Electrically Actuated Clamped Circular Plates." *Nonlinear Dynamics*, vol **47**, pp. 181-192, 2007.
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60. M. Ouled Chtiba, S. Choura, S. El-Borgi, and A. H. Nayfeh, "Passive Control of Flexible Structures by Confinement of Vibrations." *Shock and Vibration*, vol **14**, no 5, pp. 321-337, 2007.
61. O. Marzouk, A. H. Nayfeh, H. N. Arafat, and I. Akhtar, "Modeling Steady-State and Transient Forces on a Cylinder." Accepted for publication, *Journal of Vibration and Control Special Issue in Honor of the 60th Birthday of Professor A. Baz*, vol **13**, no 7, pp. 1065-1091, 2007.
62. A. H. Nayfeh, "Order Reduction of Retarded Nonlinear Systems – The Method of Multiple Scales vs. Center-Manifold Reduction." *Nonlinear Dynamics*, vol **51**, no 4, pp. 483-500, March 2008.
63. M. F. Daqaq, E. M. Abdel-Rahman, and A. H. Nayfeh, "Towards a Stable Low-Voltage Torsional Microscanner." Published online 10.1007/s00542-007-0500-4, *Microsystem Technologies*, 2008.

Marie Paretti

64. M. C. Paretti, L. D. McNair, and L. Holloway-Attaway, "Teaching Technical Communication in an Era of Distributed Work: A Case Study of Collaboration Between U.S. and Swedish Students." *Technical Communication Quarterly*, **16**(3): 327-352, 2007.

Ishwar K. Puri

65. S. Murad and I. K. Puri, "Thermal Transport Across Nanoscale Solid-Fluid Interfaces." *Applied Physics Letters*, **92**, 133105, 2008. Also selected for publication in *Virtual Journal of Nanoscale Science & Technology*, April 14, 2007.
66. S. Naha and I. K. Puri, "A Model for Catalytic Growth of Carbon Nanotubes." *Journal of Physics D: Applied Physics*, **41**, 065304, 2008.
67. K. Nandy, S. Chaudhuri, R. Ganguly, and I. K. Puri, "Analytical Model for the Magnetophoretic Capture of Magnetic Microspheres in Microfluidic Devices." *Journal of Magnetism and Magnetic Materials*, **320**, pp. 1398-1405, 2008.
68. A. K. De, A. Mukhopadhyay, and I. K. Puri, "Lattice Boltzmann Method Simulation of Electro-osmotic Stirring in a Microscale Cavity." To appear in *Microfluidics and Nanofluidics*, 2008.
69. S. Banerjee and I. K. Puri, "Enhancement in Hydrogen Storage in Carbon Nanotubes under Modified Conditions." *Nanotechnology*, **19**, 155702, 2008.
70. A. J. Lock, S. K. Aggarwal, I. K. Puri, and U. Hegde, "Suppression of Fuel and Air Stream Diluted Methane-air Partially Premixed Flames in Normal and Microgravity." *Fire Safety Journal*, **43**, pp. 24-35, 2008.
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73. S. Naha, S. Sen, A. K. De, and I. K. Puri, "A Detailed Model for the Flame Synthesis of Carbon Nanotubes and Nanofibers." *Proceedings of the Combustion Institute*, **31**, pp. 1821-1829, 2007.
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76. S. Naha, S. Sen, and I. K. Puri, "Flame Synthesis of Superhydrophobic Amorphous Carbon Surfaces." *Carbon*, **45**, pp. 1702-1706, 2007.

77. R. Ganguly and I. K. Puri, "Mathematical Model for the Chemotherapeutic Drug Efficacy in Arresting Tumor Growth Based on the Cancer Stem Cell Hypothesis." *Cell Proliferation*, **40**, pp. 338-354, 2007.
78. A. Lock, A. Briones, S. K. Aggarwal, I. K. Puri, and U. Hegde, "Liftoff and Extinction Characteristics of Fuel and Air Stream Diluted Methane-air Flames." *Combustion and Flame*, **149**, pp. 340-352, 2007.

Saad A. Ragab

79. Ragab, S. A., and A. Salem-Said, "Response of a Flat-Plate Cascade to Incident Vortical Waves." *AIAA J*, Vol. **45**, No. 9, pp. 2140-2148, September, 2007.

Shane D. Ross

80. S.D. Ross and D.J. Scheeres, "Multiple gravity assists, capture, and escape in the restricted three-body problem." *SIAM Journal on Applied Dynamical Systems*, **6**, 576-596, July 2007.

Mark A. Stremler

81. M.A. Stremler & J. Chen, "Generating topological chaos in lid-driven cavity flow." *Physics of Fluids*, **19**(10), 103602, 6pp (2007).

Research Proposals Funded

Hassan Aref

- "150 years of vortex dynamics", IUTAM, $5,000, October 12-16, 2008, Responsibility = 100%
- "150 years of vortex dynamics", Florida State University, $7,500, October 12-16, 2008, Responsibility = 100%

Ramesh C. Batra

- Analysis of Injuries in Persons Wearing soft body Armor Due to Impact Loads, ONR, $1014,716, 5/9/07-6/30/08.
- R. C. Batra, Implosion, Explosion, and Water Slamming of Marine Sandwich Structures, ONR, $330,860, 4/1/08-3/31/10.
- S. Case (25%), J. Lesko (25%), M. Hyer (25%) and R. C. Batra (25%), Multilayered Technologies for Armored Structures and Composites: Teaming the Army Research Laboratories with Virginia Tech, ARO, $491,750, 1/1/08-12/31/08.
- R. C. Batra (Co-PI with other investigators; Tim Long, PI), Multilayered Technologies for Armored Structures and Composites, Army Research Lab., $ 450,000, 2/1/08-1/31/09.

Scott W. Case

- D. Dillard, S. Case, M. Ellis, "PEM and MEA characterization and modeling," General Motors, 10/1/07-9/30/08, $206,000, (33%)
- S. Case, J. Lesko, B. Lattimer, "Development and Application of Fire Resistive Models for Naval Composite Structures," University of North Carolina Charlotte (ONR NICOP), 7/1/07-6/30/09, $210,091. (34%)
- S. Case, J. Lesko, R. Batra, M. Hyer, "Characterization and Modeling of Constituents and Composites for Lightweight Hybrid Armor Applications," Army Research Laboratory, 1/1/08-12/31/08, $491,750, (25%)
- J. Lesko, A. Zhou, S. Case, "Standard for Load Resistance Factor Design of Pultruded Fiber-Reinforced Polymer Structures: Plates," American Composite Manufacturers Association (ACMA) and American Society of Civil Engineers (ASCE), 6/2007-5/2010, $138,000. (33%)
- I. Puri, S. Case, V. Lohani, R. Mahajan, "Nanotechnology Undergraduate Education: A Spiral Curriculum Approach," NSF, 1/1/08-12/31/09, $196,875, (25%)
- J. Lua (GEM), S. Case, A. Zhou, P. DesJardin (SUNY-Buffalo), "Fire Integrity in Advanced Ship Structures, SBIR Phase I", ONR, 8/2007-3/2008, $100,000.

Raffaella De Vita

- ICTAS Initiative for Cardiovascular Non-invasive Diagnostics and Therapies, ICTAS, $246,908, PIs: R. De Vita, D. J. Leo, T. Long, Mark R. Paul, M. J. Roan, D. Tafti, P. Vlachos

David Dillard

- T. E. Long and D. A. Dillard, "Synthesis and Characterization of High Performance Polymers as Reversible Adhesives for Microelectronics Applications: A Proposal", Brewer Science, Inc., 1 April 2007 - 09 September 2008, $200,000. *Increased to $225,000 ($39,372) and extended to 09 February 2009.*
- D. A. Dillard and D. C. Ohanehi, "Poisson's Ratio Characterization of Conformal Coating", Delphi Electronics & Safety, 10 May 2007 – 09 July 2007, $10,836. ($5,418)
- D. A. Dillard, "Developing NDE Diagnostics for Adhesives and Sealants", The Adhesive and Sealant Council, Inc. 15 May 2007 – 14 May 2008, $200,000.
- D. A. Dillard, S. W. Case, M. W. Ellis, "Joint Research Effort to Evaluate a Controlled Humidity Cell Developed by TA Instruments," TA Instruments Waters, LLC, 13 August 2007 – 12 August 2009, $10,000 ($3,400).
- D. A. Dillard and D. C. Ohanehi, "Testing Protocol Development for VHB^{tm} Tapes for Structural Glazing Applications", 3M, 01 September 2007 – 31 August 2008, $97,000 ($90,000)

- D. A. Dillard, S. W. Case, M. W. Ellis, "PEM Characterization: Test Method Development and Implementation," GM, 01 October 2007 – 30 November 2008, $206,000, ($75,000).
- D. A. Dillard, "Evaluating Key Metrics Affecting Lens Demold Process", Vistakon, Johnson & Johnson Vision Care, Inc., 01 May 2008 – 30 April 2010, $326,337.
- R. L. West and D. A. Dillard, "Characterization Of Pressure Sensitive Window Adhesive/sealant And Window Joint", Dow Corning, May 2007 – March 2008, $50,000, ($25,000)

Norman E. Dowling

- "Use of High Damping Concrete to Reduce Floor Vibrations," NUCOR Research and Development, Norfolk, NE, Dec. 11, 2007, for $80,000, for period 12/25/07 to 12/24/08. The investigators T. Murray, F. Charney, R. Weyers, and N. Dowling. Funds all to be expended in the CEE Dept., with N. E. Dowling as a technical participant with 0% funding responsibility.

John C. Duke

- JC Duke, Jr. and M.R. Hajj "Highly Integrated DSS," Luna Innovations, NASA STTR, $180,000 24 months (Responsibility 67%) second year funding
- JC Duke, Jr. ASNT Fellowship Grant $15,000 24 months (Responsibility 100%)

Muhammad Hajj

- "Square Lighting Pole Wind Vibration", Hapco Aluminum Pole Products, PI: M. R. Hajj, 06-09-2007-12/24/2008, $64,427 (100%)
- Support of Luna STTR T7.02 Phase II project with NASA on "A Highly Integrated Multi-Parameter Distributed Fiber-Optic Instrumentation System", NASA LaRC, PIs: J. C. Duke and M. R. Hajj, 07/20/2007-07/19/2008, $86,660, (50%)
- "Physics-based identification and management of Aeroelastic Limit Cycle Oscillations (LCO), AFOSR STTR Phase I, Equilibria, MA, PIs: A. H. Nayfeh and M. R. Hajj, 09/01/2007-05/31/2008, $60,000, (50%)
- "Wind Tunnel Testing of Louvered Signs," PI: M. R. Hajj, Interstate Highway Sign Corp. 08/10/2007-11/30/2007, $3,200 (100%)
- Funding to spend one month at NIA, PI: M. R. Hajj, 07/08/2007-08/08/2007, $17,000 (100%)

Michael W. Hyer

- Characterization and Modeling of Constituents and Composites for Lightweight Hybrid Armor Applications, Army Research Laboratory, S. Case, J. Lesko, R. Batra, M. Hyer, 1/1/08-12/31/08, $491,750, (25%)

Luther Glenn Kraige

- "Development of All-SI Lecture Software for Statics and Dynamics", John Wiley & Sons, Inc., Publishers, $1605, 3/31/08-6/31/08, 100% of responsibility.

John J. Lesko

- S. Case, J. Lesko, B. Lattimer, "Development and Application of Fire Resistive Models for Naval Composite Structures," University of North Carolina Charlotte (ONR NICOP), 7/1/07-6/30/09, $210,091. (34%)
- S. Case, J. Lesko, R. Batra, M. Hyer, "Characterization and Modeling of Constituents and Composites for Lightweight Hybrid Armor Applications," Army Research Laboratory, 1/1/08-12/31/08, $491,750, (25%)
- J. Lesko, A. Zhou, S. Case, "Standard for Load Resistance Factor Design of Pultruded Fiber-Reinforced Polymer Structures: Plates," American Composite Manufacturers Association (ACMA) and American Society of Civil Engineers (ASCE), 6/2007-5/2010, $138,000. (33%)

Michael Madigan

- "Toyota – VT Research Partnership" Toyota Motor Manufacturing, Kentucky, Inc., $100,000, January 1, 2008 – December 31, 2008, Level of responsibility 10%. PI: M. Nussbaum, Co-I: M. Agnew, Co-I: M. Madigan
- "Safety and health in occupations center data in occupational collection for on-site research on occupational hazards", ICTAS. PI: B. M. Kleiner, Co-I: M. Madigan (with 9 others). $100,100, 10/25/2007-10/14/2008. Level of responsibility: 23%

Roop Mahajan

- NSF: STTR, with ADA Technologies, "Nanotube Metrology" ADA Project 465-001, $50,000 (my share), 1/2007-12/2007 (VT).
- Covidien: Microprobes for measuring thermal conductivity and electrical conductivity of biological tissues; $105,000; 09/2007-09/2008.
- NSF: Nanotechnology undergraduate education: A spiral curriculum approach (Co-PI); $197,853; 01/2008-12/31/2009, Professor Puri, P.I.; other co-PIs: Professors Lohani and Case.

Ali H. Nayfeh

- "Physics-Based Identification and Management of Aeroelastic Limit-Cycle Oscillations (LCO)," with M. Hajj, Equilibria, $60,000, September 1, 2007-May 31, 2008
- "Nonlinear Vibrations, Stability, and Dynamics of Structures," Army Research Office, $10,000, January 1, 2008-December 31, 2008

Marie Paretti

- "Increasing the Participation of Women in Engineering: An Examination of Gender Stereotypes, Self-Beliefs, Choice of Major, Academic Achievement, and Program Withdrawal," Institute for Society, Culture, and the Environment (ISCE), $12,950, Co-I: Brett Jones (PI), Serge Hein, and Tamara Knott, Level of responsibility: 30%

Ishwar K. Puri

- "National Science Foundation", Division of Engineering Education and Centers, Arlington, Virginia: *Nanotechnology Undergraduate Education: A Spiral Curriculum Approach* (January 1, 2008-December 31, 2009); $198,000. Dr. Mary Poats, Program Director. Principal Investigators: Ishwar K. Puri, Scott W. Case, Vinod K. Lohani, and Roop L. Mahajan. *Education.*

Saad A. Ragab

- "Development of Comprehensive Model for Simulation, Scale-up and Design of Large Flotation Machines," FLSmidth Minerals, $394,311.00, 8/17/07-9/30/08, 16% ($62,273.00), Co-PI with Yoon, Telionis, Luttrell, and Vlachos.
- "Aerodynamics and Flight Control of a Circulation Control Disk/Rotor Aircraft," Boeing/DARPA, $239,897.00, 6/25/07-3/22/08, 27% ($63,843.00), Co-PI with Telionis and Vlachos.

Shane D. Ross

- Shane D. Ross "Motor control effects of exercise on recurrent back pain" Ohio State University Research Foundation, 8/10/07 - 4/30/08, $39,185 (Responsibility = 100%)
- Shane D. Ross "Recovery envelopes: a new tool in the evaluation of fall risk" VT-ICTAS / Kevin P. Granata Occupational Safety and Health Pilot Research Program, 1/15/08 - 5/09/08, $12,628 (Responsibility = 100%)

Mahendra P. Singh

- M. Patil, M. P. Singh, and R. Kapania, "In-Flight Load Constraint Estimation and Residual Life Prediction for Aircrafts With Discrete Source Damage"**,** NASA, $558,210, M. Patil (PI, 33%), M. P. Singh (Co-PI, 33%), and R. Kapania (Co-PI, 33%), January 1, 2008- December 31, 2010

Mark A. Stremler

- Mark A. Stremler, "Mixing Enhancement in Small-Scale Flow Systems" Army Research Office, $50,000 from 8/10/07 to 5/9/08 (Responsibility: 100%)

- R. D. Moffit (PI), G. Pickrell (Co-PI), and M. A. Stremler, “Glass Extrusion Process Analysis and Optimization Research”,Virginia’s Center for Innovative Technology (CIT) $451,013, 5/1/08 to 4/30/10 (Responsibility: 25%)

Graduate Student Advising (EM Students)

Hassan Aref

- Laust Tophoj, MS
- Johan Ronby Pedersen, PhD
- Vasileios Vlachakis, PhD
- Anindya Kanti De, PhD
- Teis Schnipper, PhD (co-advisor)
- Kare Hartvig Jensen, PhD (co-advisor)

Romesh C. Batra

- W. Jiang, PhD, January 2008
- Anoop Varghese, PhD, August 2008
- Shakti Gupta, PhD, December 2008
- Alejandro Pacheco, PhD, December 2008
- Kaushik Das, PhD, April 2009
- Harikrishna, PhD, December 2009
- Gautam Gopinath, PhD, December 2009
- Mohammad Majharul Islam, PhD, Spring 2011
- Bakhtiyor Eshmatov, PhD (transferred to SUNY-Buffalo Fall 2008)
- Filipo Bosco, MS

Scott Case

- Steven Kyriakides, MS, November 2007
- Nicole Jackson, MS, November 2007
- Jacob Grohs, MS, May 2008
- Jason Cain, PhD, April 2008
- Nathan Post, PhD, March 2008 (co-advisor)
- Vlastimil Kunc, PhD, June 2009
- Zhenyu Zhang, PhD, December 2009
- Nicole Jackson, PhD, May 2010
- Michael Pestrak, PhD, December 2009
- Rich Speckart, PhD, December 2009

Mark Cramer

- Michael Morrison, MS, December 2009

Raffaella De Vita

- Zheying Guo, PhD, 2010
- Nikolaus Berger-Roscher (Hamburg University, Germany, 2009)

David Dillard

- John Hennage, PhD, 2009 (co-advised with Larry Mitchell)
- Edoardo Nicoli, PhD, 2009
- David J. Pohlit, MS, 2007
- Kshitish Patankar, PhD, 2009
- Hitendra Singh, PhD, 2009
- Yongqiang (Ron) Li, PhD, 2008
- Ben Townsend, MS, 2008

Norman Dowling

- J. M. V. Aguilar, PhD, in progress
- A. Arcari, PhD, 2009
- K. Das, PhD, in progress
- G. Farrar, MS, in progress
- S. Katicha, PhD, September 2007
- S. Kyriakides, MS, November 2007
- E. Nicoli, PhD, in progress
- E. Saether, PhD, April 2008
- C. Senatore, PhD, in progress

John Duke

- Douglas Harold, PhD, Spring 2010
- Arnab Gupta, EDC Spring 2012

John Grant

- Julian Davis, PhD, Fall 2007
- Corrie Spoon, PhD, Fall 2007
- Pranitha Gottipati, PhD, Spring 2009
- Dennis Anderson, PhD, Spring 2009

Muhammad Hajj

- Giancarlo Bordonaro, PhD, Spring 2009
- Andrea Mola, PhD, Fall 2009
- Mehdi Ghommem, PhD
- Giovanni Sansavini, PhD

Scott Hendricks

- Grant Vogl, PhD, Spring 2011

Michael Hyer

- W. Thomson Haynie, PhD, December 2007
- Maurizio Paschero, PhD, May 2008
- Lo Hunh-Chieh, PhD, December 2009

Ronald Kriz

- Sanjiv Parikh, PhD
- Arun Nair, PhD, Spring 2008 (co-advisor with Dr. Diana Farkas)
- Miguel Ortega, MS, Spring 2008 (co-advisor with Dr. Clint Dancey)

John Lesko

- John Bausano, PhD, December 2007
- Jeffrey Bolton, PhD, May 2009
- Cory Hilton, PhD, May 2009
- Zihong Liu, PhD, August 2007
- Prasun Majumdar, PhD, May 2008
- Juan Mejia-Ariza, PhD, May 2008

Michael Madigan

- Dennis Anderson, PhD, Summer 2009
- Joe Welker, MS, Spring 2009
- Sara Matrangola, MS, Summer 2008
- Michael Whitley, MS, Summer 2008
- Katie Bieryla, PhD, Summer 2009
- Greg Slota, PhD, Summer 2008
- Emily Miller, PhD, 2010

Roop Mahajan

- M. Yi, PhD, May 2007
- K. Ram, PhD, December 2007
- G. Singh, PhD, December 2007

Ali Nayfeh

- I. Akhtar, in progress
- A. Bahrami, in progress
- M. Ghommem, in progress
- B. Hammad, in progress

- O. Marzouk, in progress

Marie Paretti

- David Richter, PhD application in progress (co-chair)
- Raymond Tucker, PhD

Ishwar Puri

- Anindya Kanti De, May 2008
- Soumik Banerjee, 2008 (anticipated by July)
- Sayangdev Naha, 2008 (anticipated by August)
- Ashok Sinha, 2008 (anticipated by August)
- Ganesh Balasubramanian, 2011 (anticipated)

Saad Ragab

- Abdel-Halim Salem-Said, PhD, Summer 2007
- Yasser Aboelkassem, PhD, Fall 2010
- Alireza Karimi, PhD, Fall 2010

Shane Ross

- Martin Tanaka, PhD, May 2008 (co-advisor with Dr. Maury Nussbaum)
- Carmine Senatore, PhD, August 2009
- Piyush Grover, PhD, August 2009
- Phanindra Tallapragada, PhD, May 2010

Mahendra Singh

- Apoorva Shende, PhD, December 2008
- Saurabh S. Bisht, PhD, May 2009
- Hyun Shin, PhD, December 2008
- Harsh Nandan, PhD, May 2010

Mark Stremler

- Jie Chen, PhD, Fall 2008
- Sebastian Eluvathingal, PhD
- Pankaj Kumar, PhD, Spring 2010
- Mohsen Gheisarieha, PhD, Fall 2010

Surot Thangjitham

- Monduree Liangruksa, MS, 2008
- Pridsadang Kadkhuntod, MS, 2008
- Yunkai Lu, PhD, 2008

- Erik Saether, PhD, May 2008
- Ratchada Sopakayang, PhD, 2010
- Chalitphan Kunaporn, PhD, 2010
- Pong-Gun Song, PhD, 2010

Recent Graduates

Romesh Batra

- W. Jiang, January 2008
- Anoop Varghese, August 2008

Scott Case

- Steven Kyriakides, November 2007
- Nicole Jackson, November 2007
- Jason Cain, April 2008
- Nathan Post, March 2008

David Dillard

- David J. Pohlit, 2007

Norman Dowling

- S. Katicha, September 2007
- S. Kyriakides, November 2007
- E. Saether, April 2008

John Grant

- Julian Davis, Fall 2007
- Corrie Spoon, Fall 2007

Michael Hyer

- W. Thomson Haynie, December 2007
- Maurizio Paschero, May 2008

John Lesko

- Zihong Liu, August 2007
- Prasun Majumdar, May 2008
- Juan Mejia-Ariza, May 2008
- Nathan Post, March 2008

Roop Mahajan

- M. Yi, May 2007

- K. Ram, December 2007
- G. Singh, December 2007

Marie Paretti

- David Richter, Summer 2008

Saad Ragab

- Abdel-Halim Salem-Said, Summer 2007

Shane Ross

- Martin Tanaka, May 2008

Surot Thangjitham

- Erik Saether, May 2008

Major Advisees Outside ESM

Scott Case

- Steven Kyriakides, MS, MSE
- Michael Pestrak, PhD, MACR

David Dillard

- John Hennage, PhD, ME
- Kshitish Patankar, PhD, MACR
- Ben Townsend, MS, CEE

Norman Dowling

- J. M. V. Aguilar, PhD, Wood Science
- G. Farrar, MS, MSE
- S. Katicha, PhD, CEE
- S. Kyriakides, MS, MSE

John Duke

- Douglas Harold, PhD, EDC
- Arnab Gupta, PhD, EDC

John Grant

- Corrie Spoon, PhD, SBES

John Lesko

- John Bausano, PhD, MACR

- Cory Hilton, PhD, MACR
- Zihong Liu, PhD, CEE
- Stephen Kalista, PhD, MACR

Michael Madigan

- Katie Bieryla, PhD, ME
- Greg Slota, PhD, SBES
- Emily Miller, PhD, SBES

Roop Mahajan

- M. Yi, PhD, ME
- K. Ram, PhD, ME
- G. Singh, PhD, ME

Marie Paretti

- David Richter, MS, ME
- Raymond Tucker, PhD, CEE

Mark Stremler

- Sebastian Eluvathingal, PhD, ME