

RESUME

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PERSONAL DATA

Born: September 6, 1941; Worcester, MA
Married; two children

EDUCATION

B.S. (Mechanical Engineering), June 1963, Worcester Polytechnic Institute, Worcester, MA
M.S. (Mechanical Engineering), April 1965, Stanford University, Palo Alto, CA
Ph.D. (Mechanics), Jan 1973, Rensselaer Polytechnic Institute, Troy, NY
M.A. (Honorary), March 1993, Dartmouth College, Hanover, NH

PROFESSIONAL EXPERIENCE

Sept 1963-Mar 1965	Stanford University, Palo Alto, CA; Research Assistant
Sept 1967-Sept 1969	Wyman Gordon Company, Worcester, MA; Development Engineer
Sept 1969-Dec 1972	Rensselaer Polytechnic Inst., Troy, NY; Research Assistant & Fellow
Jan 1973-Sept 1974	Rensselaer Polytechnic Inst., Troy, NY; Post-doctoral Research Associate
Mar 1973-June 1973	Polytechnic Institute of Bucharest, Romania; Visiting Research Scientist
Sept 1974-present	Thayer School of Engineering, Dartmouth College, Hanover, NH;
Sept 1974-June 1980	Assistant Professor of Engineering
July 1980-June 1987	Associate Professor of Engineering
July 1987-present	Professor of Engineering
July 1988-June 1991	Chair, Engineering Sciences Department
June 1977-Aug 1977	NASA-Lewis Research Center, Cleveland, OH;
June 1978-Aug 1978	Summer Faculty Fellow (Research)
Aug 1982-Dec 1982	Institut National des Sciences Appliquées, Lyon, France; Visiting Research Professor
Jan 1983-Mar 1983	Asian Institute of Technology, Bangkok, Thailand;
Aug 1992-Jan 1993	Visiting Faculty Member
Jan 2001-Mar 2001	University of California, Berkeley, CA; Visiting Scholar
Mar 2001-Jun 2001	AIST Mechanical Eng'g Lab., Tsukuba, Japan; Visiting Research Scholar

MILITARY EXPERIENCE

May 1965-May 1967 Lieutenant, United States Army Signal Corps

TEACHING EXPERIENCE

Have taught the following courses one or more times: Solid Mechanics; Introduction to Engineering; Machine Design; Applied Mechanics-Dynamics; Kinematics and Dynamics of Machines; Computer-Aided Mechanical Engineering Design; Tribology; Introduction to Thermodynamics; Intermediate Solid Mechanics; Finite Element Methods; Mechanical Behavior of Materials; Continuum Mechanics; Design Methodology; Honors Seminar (Advisor); Bachelor of Engineering Project (Advisor); Masters Thesis (Advisor), Ph.D. Dissertation (Advisor)

CONSULTING EXPERIENCE

Have served as consultant to:

Teltech, Inc.; Volunteers in Technical Assistance, Inc. (VITA); AEL Applied Physics, Inc.; Wear Sciences, Inc.; Banwell, White & Arnold, Inc.; Creare R&D, Inc.; Creare Innovations, Inc.; Spectra, Inc.; Goodyear Aerospace Corporation; Markem Corporation; Union Carbide Corporation; Air Products & Chemicals, Inc.; National Institute of Standards and Technology; Hotgrips, Inc.; General Electric Co.; Cone-Blanchard Machine Co.; Synergy Research Corp.; Materials Innovation, Inc.; Hypertherm, Inc.; Precision Rotary Instruments, Inc.; Synkinetics, Inc.; Synergy Innovations, Inc.; Simbex LLC; State of New Hampshire; State of Kansas; and several law firms and insurance companies.

HONORS AND AWARDS

Tau Beta Pi

Sigma Xi

Pi Tau Sigma

Recipient of the first Burt L. Newkirk Tribology Award, American Society of Mechanical Engineers, 1976

Ralph R. Teetor Award, Society of Automotive Engineers, 1976

Presidential Council Research Grant Award, Society of Tribologists and Lubrication Engineers, 1988

Fulbright Distinguished Lecturer, Asian Institute of Technology, 1992-1993

A. Sonntag Best Paper Award, Society of Tribologists and Lubrication Engineers, 1993

Fellow, Society of Tribologists and Lubrication Engineers, 1994

Fellow, American Society of Mechanical Engineers, 1997

Dedicated Service Award, American Society of Mechanical Engineers, 1995

Outstanding Service Award, Thayer School of Engineering, 1999

Outstanding Teaching Award, Thayer School of Engineering, 2004

Listed in Who's Who in Engineering

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PROFESSIONAL SOCIETIES AND ACTIVITIES

American Society of Mechanical Engineers:
Research Committee on Tribology, Member, 1982-1994
Planning Committee, ASME-STLE Tribology Conference, Member, 1981-1990
Chairman 1989-1990
Tribology Division Executive Committee, 1990-1997, Chairman, 1993-1994
Nomination and Oversight Committee, Tribology Division, 1996-1999
Chairman, 1997-1999
Computer Technology Chairman, Tribology Division, 1976-1984
ASME Journal of Tribology
Associate Editor, 1990-1993
Chief Technical Editor, 1993-1998
ASME Board of Editors, 1993-1998
Applied Mechanics Reviews, Associate Editor, 1985-1988
Joint Honors Committee, Tribology Division, Member, 1984-1990, 2004-2010
ASME/Joint Societies Committee for Tribology Design Services,
Vice Chairman, 1986-1992
Upper Valley Subsection, Founder, 1981, Chairman, 1981-82 and 1983-84
Executive Committee, 1981-present
Faculty Advisor, Dartmouth ASME Student Section, 1976-1992
Gordon Research Conference on Tribology
Vice Chairman 1990, Chairman 1992
Society of Tribologists and Lubrication Engineers
Wear Technical Committee, Secretary, 1981-83
Computers in Tribology Committee, Vice Chairman, 1991-1992
Chairman, 1992-1993
Fellows Committee, 2003-2008
JSME International Journal, Japan Society of Mechanical Engineers
Editorial Advisory Board, 1998 - 2003
Industrial Lubrication and Tribology, Editorial Review Board, 1999-present
American Society for Metals
Member, Wear Resistant Materials Group, 1987-present
Organizing Chairman, 1st Wear Photomicrograph Competition, 1989
American Society for Engineering Education
Dartmouth College Campus Representative, 1991 - present
Society of Automotive Engineers, member
Faculty Advisor, Dartmouth Student Chapter, 1997 - 2001
American Academy of Mechanics
Sigma Xi
Dartmouth Chapter, Vice-Chairman, 1990-1992; Chairman 1992-1996
Tau Beta Pi
Faculty Advisor, New Hampshire Beta chapter, 2000-present
Fulbright Advisory Committee for Engineering, 1994-1997; Chairman 1995-1996
Comité Scientifique, Laboratoire de Mécanique des Contacts, INSA, Lyon, France
Member 1996-2002, President, 1996-1998
Jury of Awards, Lincoln Arc Welding Design Competition, 1984
DOE-ECUT Panel on Characterization and Testing of Tribomaterials, 1985
Organizing Chairman, Third Workshop on Thermomechanical Effects in Sliding
Systems, Hanover, NH, June 1984
Computerized Tribology Information System (ACTIS)
Technical Advisory Committee, 1987-1989
Chairman, Evaluation Committee, 1989-1991
Board of Directors, 1995-1997

PROFESSIONAL ACTIVITIES continued

Manuscript Reviewer: Journal of Tribology, Journal of Applied Mechanics, Wear, Lubrication Engineering, Tribology Transactions, Applied Mechanics Reviews, Tribology International, Journal of Heat Transfer, IMechE Journal of Engineering Tribology, IMechE Journal of Engineering in Medicine, Tribology Letters, Thin Solid Films, Journal of Materials Research, Materials Characterization, Clinical Orthopaedics and Related Research, Microscopy Research and Technique, Surface and Coatings Technology, Journal of Arthroplasty, Philosophical Magazine A, Medical Physics, Journal of Applied Polymer Science, McGraw-Hill Book Co., and others

Proposal Reviewer: National Science Foundation, Office of Naval Research, Army Research Office, U.S. Department of Energy, National Research Council of Canada, State of Kansas and others.

Registered Professional Engineer, State of New Hampshire

PUBLICATIONSTechnical Papers

1. F.E. Kennedy and F.F. Ling, "A Thermal, Thermoelastic, and Wear Simulation of a High-Energy Sliding Contact Problem," Trans. of ASME, J. of Lubrication Technology, 96, Series F, No. 2 (1974), pp. 497-507
2. F.E. Kennedy and F.F. Ling, "Elasto-Plastic Indentation of a Layered Medium", Trans. of ASME, J. of Engineering Materials and Technology, 96, Series H, No. 2 (1974), pp. 97-103
3. J.J. Santini and F.E. Kennedy, "An Experimental Investigation of Surface Temperatures and Wear in Disk Brakes", Lubrication Engineering, 31, No. 8 (1975), pp. 402-417
4. V.N. Constantinescu, S. Galetuse and F.E. Kennedy, "On the Comparison Between Lubrication Theory, Including Turbulence and Inertia Effects, and Some Existing Experimental Data", "Trans. of ASME, J. of Lubrication Technology, 97, Series F, No. 3, (1975), pp. 439-449
5. F.E. Kennedy, V.N. Constantinescu and S. Galetuse, "A Numerical Method for Studying Inertia Effects in Thin film Lubrication", Proc of 2nd Leeds-Lyon Symposium - Super Laminar Flow in Bearings, Mechanical Engineering Publications, London (1976), pp. 174-180
6. S.F. Murray, M.B. Peterson and F.E. Kennedy, "Wear Rates of Boundary Lubricated Cast Bronze Bearings," ASLE Trans., 20, No.4 (1977), pp. 321-327
7. F.J. Hooven and F.E. Kennedy, "Weight-Conscious Automobile Design" SAE Paper 770804, Society of Automotive Engineers, Sept. 1977
8. F.E. Kennedy and F.J. Hooven, "An Analysis of Automobile Weight and Its Reduction by Aluminum Substitution", SAE Paper 770805, Society of Automotive Engineers, Sept. 1977
9. T.L. Ho, F.E. Kennedy, and M.B. Peterson, "Evaluation of Aircraft Brake Materials", ASLE Transactions, 22 (1979), pp. 71-78
10. F.E. Kennedy and R.C. Bill, "Thermal Stress Analysis of Ceramic Gas Path Seal Components for Aircraft Turbines," NASA Technical Paper TP1437, Apr. 1979
11. F.E. Kennedy and D.A. Voss, "A Re-examination of the Wear of Brass on Hardened Steel", Wear of Materials, 1979, ASME, NY, pp. 89-96
12. F.E. Kennedy, J.P. Collier and L.A. Komornik, "An Experimental Study of the Stress Distribution in Bone Cement Used to Grout Standard and Porous Coated Hip Prostheses", Advances in Bioengineering, 1979, ASME, NY, pp. 75-78
13. F.E. Kennedy, "Thermomechanical Phenomena in High Speed Rubbing," Wear, 59 (1980), pp. 149-163
14. F. E. Kennedy, "Surface Temperatures in Sliding Systems - A Finite Element Analysis," ASME J. of Lubrication Technology, 103 (1981), pp. 90-96
15. F.E. Kennedy, and N.P. Hine, "Single-Pass Rub Testing of Abradable Seal Materials," Lubrication Engineering, 38 (1982), pp. 557-563
16. F.E. Kennedy and S.A. Karpe, "Thermocracking of a Mechanical Face Seal", Wear, 79 (1982), pp. 21-36
17. F.E. Kennedy, "Single-Pass Rub Phenomena - Analysis and Experiment", ASME J. Lubrication Technology, 104 (1982), pp. 582-588
18. F.E. Kennedy, J.P. Collier and M.B. Mayor, "The Effects of Total Hip Implant Geometry on Femoral Stress Distribution", Proc. 10th Northeast Bioengineering Conf., Hanover, NH 1982, pp. 162-166

19. F.E. Kennedy, "Factors Affecting Abradability of Porous and Fully-Dense Metals", Wear of Materials, 1983, ASME (1983), pp. 153-160
20. F.E. Kennedy, and L.P. Grotelueschen, "Determination of Near-Surface Plastic Deformation in Sliding Contacts," J.Applied Mechanics, 51 (1984), pp. 687-689
21. F.E. Kennedy, and J.N. Grim, "Observation of Contact Conditions in Mechanical Face Seals," ASLE Transactions, 27 (1984), pp. 122-128.
22. F.E. Kennedy, F. Colin, A. Floquet and R. Glovsky, "Improved Techniques for Finite Element Analysis of Sliding Surface Temperatures", Developments in Numerical and Experimental Methods Applied to Tribology, Butterworths, London, (1984), pp. 138-150
23. K.D. Paulsen, J.W. Strohbehn, S.C. Hill, D.R. Lynch and F.E. Kennedy, "Theoretical Temperature Profiles for Concentric Coil Induction Heating Devices in a Two-Dimensional, Axisymmetric, Inhomogeneous Patient Model", Intl. J. Rad. Onc. Biol. Phys., 10 (1984), pp. 1095-1107
24. F.E. Kennedy, "An Experimental/Theoretical Study of Contact Phenomena in Mechanical Face Seals," Developments in Numerical and Experimental Methods Applied to Tribology, Butterworths, London, (1984), pp. 285-291
25. F.E. Kennedy, "Thermal and Thermomechanical Effects in Dry Sliding" Wear, 100 (1984), pp. 453-476
26. F.E. Kennedy, L.A. Hartman, K.E. Hauck and V.A. Surprenant, "The Role of Plastic Deformation in the Wear of Lamellar Solids," Wear of Materials 1985, ASME (1985), pp. 273-279
27. F.E. Kennedy, C.K. Chuah and F.O.W. Brote, "Thermomechanical Contact Phenomena in Face Seals" Wear, 102 (1985), pp. 127-140
28. F.X. Dolan, F.E. Kennedy, and E.M. Schulson, "An Experimental Investigation of Rubbing Interaction in Labyrinth Seals at Cryogenic Temperatures", Wear, 102, (1985), pp. 51-66
29. J.R. Fries and F.E. Kennedy, "Bibliographic Databases in Tribology", ASME J. of Tribology, 107, (1985), pp. 285-295
30. F.E. Kennedy, L. Smidhammar and D. Play, "Wear of Polyethylene in Small-Amplitude Oscillatory Motion", Eurotrib 85, Proceedings of 4th European Tribology Congress, Ecully, France, v. 2, (1985), Paper 5.1.2, pp. 1-9
31. N.P. Huber, K.Itagaki and F.E. Kennedy, "Dynamic Friction of Bobsled Runners on Ice", La Glisse, Proc. 1st Congress on Sport, Research and Technology, Paris, France, Dec 1985, paper 12, pp. 1-26.
32. L.Rozeanu, F.E. Kennedy, and M. Maayan, "The Viscosity Index of Multigrade Lubricants", Lubrication Engineering, 43 (1987), pp.809-816
33. F.E. Kennedy, K.E. Hauck and L.P. Grotelueschen, "Plasticity Analysis of Wear Phenomena as an Aid in the Development of Abradable Materials", in Mechanisms and Surface Distress, Dowson, et al., eds., Butterworths, London, (1986), pp. 67-73
34. S. Abarou, D. Play, and F.E. Kennedy, "Wear Transition of Self-Lubricating Composites Used in Dry Oscillating Applications", ASLE Transactions, 30 (1987), pp. 269-281.
35. V.R. Evans and F.E. Kennedy, "The Effects of Temperature on Friction and Wear in Oscillatory Motion of Polyethylene Against Stainless Steel," Wear of Materials 1987, ASME, Houston (1987), pp. 427-433
36. F.E. Kennedy, and S. Z Hussaini, "Thermomechanical Analysis of Dry Sliding Systems", Computers and Structures, 26 (1987), pp. 345-355

37. F.E. Kennedy, S.Z. Hussaini and B.M. Espinoza, "Contact Conditions and Wear of Hard Seal Faces", Lubrication Engineering, v. 44 (1988), pp 361-367
38. F.E. Kennedy, "Plastic Analysis of Near-Surface Zones in Sliding Contact of Metals", in R. Solecki, ed: Role of Subsurface Zones in the Wear of Materials, Trans Tech Publications, Switzerland (1988), pp 35-47
39. F.E. Kennedy, G. Phetteplace, N. Humiston and V. Prabhakar, "Thermal Performance of a Shallow Utilidor: Measured and Calculated Results", Proc. V Int'l Conf. on Permafrost, Trondheim, Norway, (1988), v. II, pp 1262-1267
40. F.E. Kennedy, "Large Plastic Deformation in Sliding Friction and Wear", in F.F. Ling and C.H.T. Pan, eds: Approaches to Modeling of Friction and Wear, Springer Verlag, New York (1988), pp 96-101
41. S. Suzuki and F.E. Kennedy, "Friction and Temperature at Head-Disk Interface in CS/S Tests", Tribology and Mechanics of Magnetic Storage Systems, V (1988), pp 30-36.
42. F.E. Kennedy, S.C. Cullen and J-M Leroy, "Contact Temperature and its Effects in an Oscillatory Sliding Contact", ASME J. of Tribology, 111 (1989), pp 63-69
43. L. Rozeanu, M. Maayan and F.E. Kennedy, "Flow Behavior of Multigrade Lubricants in Rolling Bearings and Gears", Proc 5th International Congress on Tribology, v. 4 (1989), pp 126-132
44. S. Suzuki and F. E. Kennedy, "Incipient Damage on Thin Film Magnetic Disks and Its Detection with a Corrosion Test", Tribology and Mechanics of Magnetic Storage Systems, v. VI (1989), pp 111-119
45. T.A. Blanchet and F.E. Kennedy, "The Development of Transfer Films in Ultra-High Molecular Weight Polyethylene/Stainless Steel Oscillatory Sliding", Tribology Transactions, 32 (1989), pp 371-379
46. D. M. Tetreault and F.E. Kennedy, "Friction and Wear Behavior of Ultrahigh Molecular Weight Polyethylene on Co-Cr and Titanium Alloys in Dry and Lubricated Environments", Wear, 133 (1989), pp 295-307
47. S. Suzuki and F.E. Kennedy, "Measurement of Flash Temperature and Contact Between Slider and Magnetic Recording Disk", IEEE Trans. on Magnetics, 25 (1989), pp 3728-3730.
48. F.E. Kennedy, B.M. Espinoza and S.M. Pepper, "Thermocracking and Wear of Ceramic-Coated Face Seals for Salt Water Applications", Lubrication Engineering, 46 (1990), pp. 663-671.
49. F.E. Kennedy and L. Tang, "Factors Affecting the Sliding Performance of Titanium Nitride Coatings", in Mechanics of Coatings, Dowson, Taylor and Godet, eds., Elsevier Science Publ., (1990), pp. 409-415.
50. F.F.Ling and F.E. Kennedy, "Contact and Surface Mechanics", in Achievements in Tribology, L. Sibley and F. Kennedy, eds., ASME, New York, 1990, pp 129-149.
51. T.A. Blanchet and F.E. Kennedy, "Effects of Oscillatory Speed and Mutual Overlap on the Tribological Behavior of PTFE and Selected PTFE-Based Self-Lubricating Composites", Tribology Transactions, 34 (1991), pp 371-379.
52. T.A. Blanchet, F.E. Kennedy and X. Tian, "The Mild/Severe Wear Transition of PTFE Polymer in Oscillatory Sliding Contact", Wear of Materials - 1991, v. 2 (1991), pp. 689-692.
53. S. Suzuki and F.E. Kennedy, "The Detection of Flash Temperatures in a Sliding Contact by the Method of Tribo-Induced Thermoluminescence", ASME J. of Tribology, 113 (1991), pp 120 - 127.

54. S. Jahanmir and F.E. Kennedy, "Tribology Education: Present Status and Future Challenges", ASME Journal of Tribology, **113** (1991), pp. 229-231.
55. L. Rozeanu, M. Maayan and F.E. Kennedy, "The Effect of Shear Rate on Viscosity of the Mineral Oil-HSB System", Tribology Transactions, **34** (1991), pp 389-397.
56. F.E. Kennedy, P.H. Lee, J.P. Feehan and J.P. Collier, "Failure of UHMWPE Polymer Surfaces of Knee Prostheses: A Rolling/Sliding Contact", Advances in Engineering Tribology, Y.W. Chung and H.S. Cheng, eds., v. SP-31 (1991), pp. 100-109.
57. D.E. Jones, F.E. Kennedy and E.M. Schulson, "The Kinetic Friction of Saline Ice Against Itself at Low Sliding Velocities", Annals of Glaciology, **15** (1991), pp. 242-246.
58. T.A. Blanchet and F.E. Kennedy, "Sliding Wear Mechanism of Polytetrafluoroethylene (PTFE) and PTFE Composites", Wear, **153** (1992), pp. 229-243.
59. X. Tian, F.E. Kennedy, J.J. Deacutis and A.K. Henning, "The Development and Use of Thin Film Thermocouples for Contact Temperature Measurement", Tribology Transactions, **35** (1992), pp. 491-499.
60. T.A. Blanchet, D.T. Jayne and F.E. Kennedy, "XPS Analysis of the Effect of Fillers on PTFE Transfer Film Development in Sliding Contacts", Tribology Transactions, **36** (1993), pp 535-544.
61. G.C. Ruben, T.A. Blanchet and F.E. Kennedy, "Formation of UHMWPE Polymeric Transfer Films on Sliding Glass Counterfaces: Early and Steady State Wear Studied by Transmission Electron Microscopy", J. of Materials Science, **28** (1993), pp. 1045-1058.
62. X. Tian and F.E. Kennedy, "Contact Surface Temperature Models for Finite Bodies in Dry and Boundary Lubricated Sliding", ASME. J. of Tribology, **115** (1993), pp. 411-418.
63. X. Tian and F.E. Kennedy, "Temperature Rise at the Sliding Contact Interface for a Coated Semi-Infinite Body", ASME. J. of Tribology, **115** (1993), pp. 1-9.
64. F.E. Kennedy and X. Tian, "The Effect of Interfacial Temperature on Friction and Wear of Thermoplastics in the Thermal Control Regime", Dissipative Processes in Tribology, D. Dowson and C.M. Taylor, eds., Elsevier, Amsterdam, (1994), pp. 235-244.
65. X. Tian and F.E. Kennedy, "Maximum and Average Flash Temperatures in Sliding Contacts", ASME. J. of Tribology, **116** (1994), pp.167-174, .
66. X. Tian and F.E. Kennedy, "Prediction and measurement of surface temperature rise at the contact interface for oscillatory sliding", J. of Engineering Tribology, **209** (1995), pp. 41-51.
67. F.E. Kennedy, I. Baker and B.J. Johnson, "Wear of Ductile-Phase Toughened NiAl", Proc. Materials Research Society, **364**, pt. 1 (1995), pp. 555-560.
68. F.E. Kennedy, A.K. Henning, D. Frusescu, L.M. Caballero, X. Tian and T.M. Cook, "Temperature Sensors for Detecting Failure of Tribological Components", Life Extension of Aging Machinery and Structures, Soc. for Machinery Failure Prevention Technology, **49** (1995), pp. 281-292.
69. B.J. Johnson, F.E. Kennedy and I. Baker, "Dry Sliding Wear of NiAl", Wear, **192** (1996), pp. 241-247.
70. M. Lee, W.G. Morris, A.K. Han and F.E. Kennedy, "Frictional Characteristics of Diamond Sliding on As-Grown Surfaces of Large Gem Quality Single Crystal Synthetic Diamond", Mat Sci, & Engg., **A209** (1996). pp. 60-67.
71. F.E. Kennedy, M. George, I. Baker, B.J. Johnson and N. Chang, "Influence of Composition and Environment on Wear of NiAl and Ni-Fe-Al", Proc. Int'l. Tribology Conf., Yokohama 1995, Japanese Society of Tribologists, 1996, v. I, pp. 337-342.

72. L. Rozeanu and F.E. Kennedy, "Elusive 'Third Bodies'", The Third Body Concept: Interpretation of Tribological Phenomena, D. Dowson, et. al., eds., Elsevier, Amsterdam, 1996, pp. 115-123.
73. D. Frusescu and F.E. Kennedy, "The Use of Thin Film Thermocouples in Sliding Temperature Measurement", Proc. Rotrib '96, 7th International Tribology Conference, Bucharest, Romania, 1996, pp. 166-177.
74. F.E. Kennedy, D. Frusescu and J. Li, "Thin film thermocouple arrays for sliding surface temperature measurement", Wear, 207 (1997), pp. 46-54.
75. F.E. Kennedy, A.C. Balbahadur and D.S. Lashmore, "The friction and wear of Cu-based silicon carbide composites for brake applications", Wear, 203-204 (1997), pp. 715-721.
76. M.I. Miga, K.D. Paulsen, F.E. Kennedy, P.J. Hoopes, A. Hartov and D.W. Roberts, "A 3D Brain Deformation Model Experiencing Comparable Surgical Loads", Proc. 19th Ann. Int'l Conf. IEEE Eng. Med. Biology Soc., 1997, v. 2, 773-776.
77. J.H. Currier, J.L. Duda, J.P. Collier, D.K. Sperling, B.H. Currier and F.E. Kennedy, "In Vitro Simulation of Contact Fatigue Damage Found in UHMWPE Components of Knee Prostheses", IMEchE Journal Of Engineering in Medicine, 212 (1998), Part H, pp. 293-302.
78. M.I. Miga, K.D. Paulsen and F.E. Kennedy, "Von Neumann Stability Analysis of Biot's General Two-Dimensional Theory of Consolidation", Int. J. of Numerical Methods in Engineering, 43 (1998), pp. 955-974.
79. M.I. Miga, K.D. Paulsen, F.E. Kennedy, P.J. Hoopes, A. Hartov and D.W. Roberts, "Modeling Surgical Loads to Account for Subsurface Tissue Deformation during Stereotactic Surgery", IEEE SPIE Proc. of Laser-Tissue Interaction IX, 3254 (1998), pt. B, pp. 501-511.
80. D.W. Roberts, A. Hartov, F.E. Kennedy, M.I. Miga and K.D. Paulsen, "Intraoperative brain shift and deformation: A quantitative clinical analysis of cortical displacements in 28 cases", Neurosurgery, 43 (1998), pp. 749-760.
81. M.I. Miga, K.D. Paulsen, F.E. Kennedy, P.J. Hoopes, A. Hartov and D.W. Roberts, "Quantification of a 3D brain deformation model experiencing a temporal mass expansion", Proc. 24th IEEE Northeast Bioengineering Conf., Hershey, PA, (1998). pp. 68-71.
82. M.I. Miga, K.D. Paulsen, F.E. Kennedy, P.J. Hoopes, A. Hartov and D.W. Roberts, "Initial in-vivo analysis of 3D heterogeneous brain computations for model-updated image-guided neurosurgery", Lecture Notes in Computer Science, Springer-Verlag, New York, 1496 (1998), pp. 743-752.
83. K.D. Paulsen, M.I. Miga, F.E. Kennedy, P.J. Hoopes, A. Hartov and D.W. Roberts, "A Computational Model for Tracking Subsurface Tissue Deformation During Stereotactic Neurosurgery", IEEE Trans. on Biomedical Engineering, 46 (1999), pp. 213-225.
84. L. Rozeanu and F.E. Kennedy, "Surface and Near-Surface Interactions Affecting Friction and Wear", Lubrication at the Frontier, D. Dowson, et. al., eds., Elsevier, Amsterdam, 1999, pp. 665-672.
85. F.E. Kennedy, C.A. Brown, J. Kolodny and B. Sheldon, "Fractal Analysis of Hard Disk Surface Roughness and Correlation with Start/Stop Friction", ASME J. of Tribology, 121 (1999), pp. 968-974.
86. D.W. Roberts, M.I. Miga, A. Hartov, S. Eisner, J.M. Lemery, F.E. Kennedy, and K.D. Paulsen, "Intraoperatively updated neuroimaging using brain modeling and sparse data", Neurosurgery, 45 (1999), pp. 1199-1207.
87. M.I. Miga, K.D. Paulsen, F.E. Kennedy, P.J. Hoopes, A. Hartov and D.W. Roberts, "Model-updated image guidance: initial clinical experiences with gravity-induced brain deformation", IEEE Trans. on Medical Imaging, 18 (1999), pp. 866-874.

88. E.E.W. Van Houten, K.D. Paulsen, M.I. Miga, F.E. Kennedy and J.B. Weaver, "An overlapping subzone technique for MR based elastic property reconstruction", Magnetic Resonance in Medicine, 42 (1999), pp. 779-786.
89. M.I. Miga, K.D. Paulsen, F.E. Kennedy, P.J. Hoopes, A. Hartov and D.W. Roberts, "Model-updated image-guided neurosurgery using the finite element method: incorporation of the falx cerebri", Lecture Notes in Computer Sci., Springer-Verlag, New York, 1679 (1999), pp. 900-909.
90. F.E. Kennedy, E.M. Schulson and D.E. Jones, "The friction of ice on ice at low sliding velocities", Phil. Mag. A, 80 (2000), pp. 1093-1110.
91. E.E.W. Van Houten, J.B. Weaver, M.I. Miga, F.E. Kennedy and K.D. Paulsen, "Elasticity reconstruction from experimental MR displacement data: Initial experience with an overlapping subzone finite element inversion process", Medical Physics, 27 (2000), pp. 101-107.
92. M.I. Miga, K.D. Paulsen, F.E. Kennedy, P.J. Hoopes, A. Hartov and D.W. Roberts, "In-vivo quantification of a homogeneous brain deformation model for updating preoperative images during surgery", IEEE Trans. on Biomedical Engineering, 47 (2000), pp. 266-273.
93. F.E. Kennedy, J.H. Currier, S. Plumet, J.L. Duda, D.P. Gestwick, J.P. Collier, B.H. Currier, and M-C. DuBourg, "Contact Fatigue Failure of Ultra-High Molecular Weight Polyethylene Bearing Components of Knee Prostheses", ASME J. of Tribology, v. 122 (2000), pp. 332-339.
94. M.I. Miga, K.D. Paulsen, F.E. Kennedy, P.J. Hoopes, A. Hartov and D.W. Roberts, "In-vivo analysis of heterogeneous brain deformation computations for model-updated image guidance", Computer Methods in Biomechanics and Biomedical Engineering, 3 (2000), pp. 129-146.
95. F.E. Kennedy, "Determination Of Contact Temperatures Resulting From Frictional Heating", Proc. Int'l. Trib. Conf. 2000 - Nagasaki, Japan, pp. 313-318
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THESES SUPERVISEDDoctoral Theses:

- T.A. Blanchet, PhD 1992, "The Wear Resistance Mechanism of Particulate Fillers in Polytetrafluoroethylene-based Polymer Composites"
 X. Tian, PhD 1993, "Surface Temperature at the Contact Interface of Sliding Systems"

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- M.J. Sklar, ME 1977, "Design of a Universal Friction and Wear Tester"
 J.A. Vandergrift, ME 1977, "Design and Testing of Polymeric Bone Plates"
 T.K. Rudolph, MS 1980, "An Examination of factors Influencing Impact Indentation"
 N.P. Hine, ME 1981, "The Energetics of High Speed Seal Rubs"
 R.P. Glovsky, ME 1982, "Development and Application of THERMAP"
 L.P. Grotelueschen, ME 1982, "Investigation of Single Pass Rub Phenomena"
 J.N. Grim, ME 1983, "Thermoelastic Instabilities in Face Seals"
 K.A. Forland, MS 1984, "Kinetic Friction Coefficient of Ice"
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 L. Tang, MS 1989, "Factors Affecting Durability of Titanium Nitride Coatings"
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 J.P. Feehan, MS 1991, "A Multi-Axis Knee Wear Tester: Design and Preliminary Test Results"
 K.A. Hovem, MS 1991, "Development of a Probe for Measurement of Liquid Water Content and Droplet Size during Atmospheric Icing Conditions"
 K.R. Kimmel, ME 1991, "Evaluation of Electron Beam Evaporated Tungsten as an X-ray Mask Absorber Material"
 M.R. Walsh, ME 1991, "Design and Analysis of a Low-Speed Drag Plow for Use in Deep Snow"
 P.H. Lee, MS 1992, "Failure of UHMWPE Surfaces in Rolling/Sliding Contact with Metals"
 B.A. Coutermarsh, MS 1993, "Experimental and Numerical Analysis of floating Ice Beam Impact Forces Against a Sloped Structure"
 L.M. Caballero, MS 1994, "Development of a Thin Film Thermocouple Array"
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- B.J. Johnson, MS 1995, "A Tribological Study of NiAl: Test Apparatus Design and Experimental Results"
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- J. Li, MS 1997, "Development and Application of Thin Film Thermocouple Arrays for Sliding Surface Temperature Measurement"
- A. Balbahadur, MS 1997, "A Tribological Study of Copper-Based Silicon Carbide Particulate Metal Matrix Composites for Brake Rotor Applications"
- Y. Wu, MS 1997, "Simple Shear Processing of Materials"
- A. Coppock, MS 1999, "The Effect of Sulfur Content in Bearing Steel on the Surface Fatigue of Motorcycle Power Transmission Gears"
- B. Wong, MS 2000, "Issues in Wear Measurement and Testing of Knee Prostheses"
- A. Zimmerman, MS 2001, "Measuring Biomechanical Properties of Aneurysmal Abdominal Aortic Tissue with Uniaxial Tensile Tester"
- D. Lidhagen, MS (Royal Institute of Technology, Sweden) 2002, "Tribotesting of Hard Coatings"
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In addition, served on thesis committees for about 10 Ph.D. and 25 Masters theses, including three doctoral theses in France, supervised over 50 individual Bachelor of Engineering projects and Senior Honors Theses, and advised many group design projects, several of which won national awards.

SPONSORED RESEARCH ACTIVITIESPrincipal Investigator on Following Research Projects:

'Thermomechanical Effects in High Speed Seal Rubs'; Funded by NASA Lewis Research Center; \$167,774; 2/26/79-12/31/84

'Thermocracking of Mechanical Face Seals'; Funded by David Taylor Naval Ship R&D Center; \$10,500; 9/25/79 - 6/15/81

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'In-Situ Measurement of Surface Temperature and Contact Area During Sliding'; Funded by Office of Naval Research; \$191,038; 2/5/93 - 3/31/95

'Temperature Probes for Detecting Incipient Failure of Tribological Components'; Funded by Office of Naval Research; \$137,068; 4/1/95 - 9/30/96

'The Effect of Ductile Phases on the Deformation and Wear of Brittle Intermetallics'; Funded by National Science Foundation; \$323,666; 4/1/93 - 9/30/97

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"IBEX: In-Bed Exerciser for Geriatric Patients", Funded by National Science Foundation (GoalI), \$25,000, 8/1/98 - 1/31/99

"Accelerated Life Cycle Testing and Modeling of UHMWPE Bearings for Knee Prostheses", Funded by National Science Foundation, \$260,832, 9/15/99 – 3/1/03

"Wear Resistance of Carbon Films Sputtered on Steel Surfaces", collaboration with AIST, Tsukuba, Japan, Taiho Kogyo Tribology Research Foundation, \$20,000, 7/1/01 - 7/01/02

"Innovative Materials and Coatings for Lightweight Packaging", SBIR subcontract funded by Creare, Inc., \$21,504, 7/1/03-2/1/04

"New Materials for Shock-Resistant Packaging Applications", SBIR subcontract funded by Creare, Inc. \$50,000, 5/1/04 – 3/1/05

"Flow Characteristics of Non-Newtonian Fluid and its Applications", co-PI (with M. Mongkolwongrojn), funded by Thailand Research Fund, \$40,300, 3/1/05-2/28/07

Also served as P.I. of about ten small (\leq \$10,000) projects sponsored by industry during the period 1975 - present.

Served as co-Principal Investigator or co-Investigator of grants/contracts dealing with automobile weight reduction (DOT, with F. Hooven), biomechanics of hip prostheses (orthopaedic industry, with J. Collier), biomechanics of neurosurgery (NIH, with K. Paulsen), magnetic resonance elastography (NIH, with J. Weaver) and biomechanics of abdominal aortic aneurysms (NIH, with M. Fillingner).