Curriculum Vitae

***Michael J. Kaufman*:** Department Head, Professor of Metallurgical and Materials Engineering and Director of Electron Microscopy Laboratory, Colorado School of Mines, Director of Center for Advanced Non-Ferrous Structural Alloys (CANFSA) – joint NSF I/UCRC with University of North Texas.

Education: 1979 B.S., 1984 Ph.D. University of Illinois in Urbana, Metallurgical Engineering, Ph.D. Dissertation: "Rapid Solidification and Undercooling in Al-Ge Alloys: Characterization and Control of Microstructure"

Present/Former Affiliations: 2007-present: Professor of Metallurgical and Materials Engineering and Director of Electron Microscopy Laboratory, Colorado School of Mines; 2004 - 2007: Professor and Chair, University of North Texas; 2002 – 2004: Professor and Associate Chair, University of Florida; 1995 - 2002: Professor, University of Florida; 1989 - 1995, Associate Professor, University of Florida; 1986 - 1989, Assistant Professor, University of Washington; 1984 - 1986, Metallurgist, National Bureau of Standards in Gaithersburg, Maryland; 1980 - 1984, Graduate Research and Postdoctoral Assistant, University of Illinois; 1979 - 1980, Research Engineer, United Technologies Research Center; 1977 - 1979, Undergraduate Research Assistant, University of Illinois

Scholarships and Awards

1977 Outstanding Young Men of America
1982 Annual TMS-AIME Graduate Student Paper Contest Award
1983 Annual TMS-AIME Graduate Student Paper Contest Award
1981 David Laine Memorial Scholarship for Die Casting Research
1994 Sterling's Who's Who
1995 Materials Science Excellence Award
1995 Invited to work at the Interdisciplinary Research Centre at the Univ. of Birmingham, UK for ten weeks
1996 Materials Science Excellence Award
1997 ASM Fellow
2002/3 ASEE/NASA Faculty Fellow – spent 10 weeks each summer working at NASA Glenn.

Professional Memberships and Committees

1977 - ASM, TMS-AIME, Alpha Sigma Mu Metallurgical Honorary Society
1984 - 1985 ASM Educational Committee, Washington, DC Chapter
1987 - 1989 ASM Educational Committee, Puget Sound Chapter
1988 - 1989 ASM Student Affairs Chairman
1987 - 1989 Faculty Sponsor, ASM-TMS/AIME U. of Washington Student Chapter
1984 - 1988 Electron Microscopy Society of America
1984 - Materials Research Society
1990 - 1992 American Ceramic Society
1987 - ASM/MSD Phase Transformations Committee
1988 - 1995 TMS - Titanium Committee
1991 - 1993 Faculty Co-adviser, ASM-TMS/AIME U. of Florida Student Chapter
1991 - 1994 ASM Programming Committee Chairman - Materials Science Division
ASM/TMS Co-Chair for Fall Materials Week
1996 Co-organizer of ASM session on Interstitial Effects in Intermetallics
1999 Co-organizer of TMS session on Structural Silicides
1998 - Frequent panel member for proposal reviews (NSF, DOE and NASA primarily)

Areas of Research and Instruction

Structure-Property-Processing Relationships in Metals, Intermetallics and Composites, Physical

Metallurgy and Phase Transformations, Conventional and Rapid Solidification, Materials Characterization Using X-Ray Diffraction and Electron Microscopy

Courses Taught

University of Washington: Introduction to Materials Science, Materials Characterization, Materials Processing

University of Florida: Introduction to Materials Science, Microstructural Transformations in Materials, Transmission Electron Microscopy, Advanced Materials Processing, Nonferrous Alloys, Rapid Solidification Processing, Introduction to Engineering, Crystallography

University of North Texas: Diffraction Science, Advanced Concepts in Metallurgical Science, Transmission Electron Microscopy

Colorado School of Mines: Crystallography and Diffraction, Engineering Alloys, Phase Equilibria and Phase Diagrams, Foundry, Short courses on SEM and TEM methods

Patents

1. S. Jayashankar and M.J. Kaufman: "Refractory Metal Reinforced $MoSi_2$/SiC Composite with matched Thermal Coefficients of Expansion," U.S. Patent No.5, 340, 531, Issued Aug. 23, 1994, Assigned to the University of Florida.
2. S. Jayashankar and M.J. Kaufman: "Composite Silicide/Silicon Carbide Mechanical Alloy," U.S. Patent #5,454,999, Issued October 3, 1995, Assigned to the University of Florida.
3. S. Jayashankar and M.J. Kaufman: "Composite Silicide/Silicon Carbide Mechanical Alloy," - Continuation-in-part, Application in Progress.
4. S. Jayashankar, K.T. Hong, and M.J. Kaufman, "Method of Near-net Shape Manufacture of High Strength $MoSi_2$/SiC Composites," Assigned to the University of Florida.
5. M.J. Kaufman and W.G. Sawyer. "Endodontic Files Made Using Bulk Metallic Glasses, U.S. Application Serial No. 10/457,014.

Chapter in Book

1. F. Ebrahimi and M.J. Kaufman: "Metals and Alloys, Structure of," Encyclopedia of Applied Physics, 1994, VCH Publishers Inc, Vol. 10 (1994) 199-213.

Refereed Publications in Archival Journals

1. M.J. Kaufman and H.L. Fraser, "Technique for the Observation of Rapid Solidification and Annealing of Powders in a Transmission Electron Microscope," *Scripta Met*. **17** (l983) 141-145.
2. M.J. Kaufman and H.L. Fraser, "Analysis of *in situ* Rapid Solidification of Submicron Al-Ge Eutectic Powders Using Transmission Electron Microscopy," *Metall. Trans*. **14A** (1983) 623-633.
3. M.J. Kaufman and H.L. Fraser, "Metastable Phase Formation in Rapidly Solidified Submicron Powders of Al-30.3 Ge Eutectic Alloy," *Mater. Sci. and Eng*. **57** (1983) L17-L19.
4. M.J. Kaufman, J.A. Eades, M.H. Loretto, and H.L. Fraser, "A Study of a Cellular Phase Transformation in the Ternary Ni-Al-Mo Alloy System," *Metall. Trans*. **14A** (1983) 1561-1571.
5. M.J. Kaufman and H.L. Fraser, "The Importance of Undercooling in the Formation of Non-Equilibrium Structures in the Al-Ge Alloy System," *Int. J. Rapid Solidification* **1** (1985) 27-50.
6. M.J. Kaufman and H.L. Fraser, "Characterization of Metastable Crystalline Phases in the Al-

Ge Alloy System," *Acta Met*. **33** (1985) 191-203.

7. L. Bendersky, R.J. Schaefer, F.S. Biancaniello, W.J. Boettinger, M.J. Kaufman, and D. Shechtman, "Icosahedral Al-Mn and Related Phases: Resemblance in Structure," *Scripta Met*. **19** (1985) 909-914.
8. M.J. Kaufman, D.G. Konitzer, R.D. Shull, and H.L. Fraser, "An Analytical Electron Microscopy Study of the Recently Reported 'Ti_2Al Phase' in γ-TiAl Alloys," *Scripta Met*. **20** (1986) 103-108.
9. M.J. Kaufman, M. Ellner, and H.L. Fraser, "Constitution of an Al-37.5Ge Splat Quenched Foil: Implications on Nucleation Kinetics," *Scripta Met*. **20** (1986) 125-128.
10. M.J. Kaufman and R.D. Shull, "Nature of Large Ti_4Cu_2O Particles Formed During Annealing of $Cu_{55}Ti_{45}$ Metallic Glass Ribbons," *Metall. Trans*. **17A** (1986) 575-581.
11. M.J. Kaufman, D.D. Pearson, and H.L. Fraser, "The Use of Convergent Beam Electron Diffraction to Determine Local Lattice Distortions in Ni-Base Superalloys," *Phil. Mag*. **A54** (1986) 79-92.
12. M.J. Kaufman and A.J. Forty, "A Detailed Fractographic Analysis of Cleavage Steps in Si," *J. Mater. Sci*. **21** (1986) 3167-3172.
13. L. Bendersky and M.J. Kaufman, "Determination of the Point Group of the Icosahedral Phase by Convergent Beam Electron Diffraction," *Phil. Mag*. **B53** (1986) L75-L80.
14. M.J. Kaufman, J.E. Cunningham, Jr., and H.L. Fraser, "Metastable Phase Production and Transformation in Al-Ge Alloy Films by Rapid Crystallization and Annealing Treatments," *Acta Met*. **35** (1987) 1181.
15. M.J. Kaufman and J.L. Fink, "A Closer Look at the Transgranular Stress Corrosion Cracking of Cu-30Zn in Cuprous Ammonia," *Metall. Trans*. **18A** (1987) 1539.
16. K.G. Kreider, F.S. Biancaniello, and M.J. Kaufman, "Sputter Deposition of Icosahedral Al-Mn and Al-Mn-Si," *Scripta Met*. **21** (1987) 657-662.
17. M.J. Kaufman and A.J. Melmed, "Evidence for Structural Disorder in the Icosahedral Phase," *Phil. Mag*. **56** (1987) 129-134.
18. L.A. Bendersky, M.J. Kaufman, W.J. Boettinger, and F.S. Biancaniello, "Solidification of an 'Amorphous' Phase in Rapidly Solidified Al-Fe-Si Alloys," *Mater. Sci. and Eng*. **98** (1988) 213-216.
19. S.A. Jones, R.D. Shull, A.J. McAlister, and M.J. Kaufman, "Microstructural Studies of Ti-Al Alloys in the Vicinity of the 'Eutectoid' Reaction ($\alpha \rightarrow \alpha_2+\gamma$)," *Scripta Met*. **22** (1988) 1235-1240.
20. M.J. Kaufman, "Analytical Electron Microscopy of Fine Powders," *J. of Metals* **40** No. 8 (1988) 15-17.
21. M.J. Kaufman and J.L. Fink, "Evidence for Localized Ductile Fracture in the 'Brittle' Transgranular Stress Corrosion Cracking of Ductile FCC Alloys," *Acta Met*. **36** (1988) 2213-2228.
22. M.J. Kaufman, K.G. Kreider, and F.S. Biancaniello, "The Annealing Behavior of Sputter-Deposited Al-Mn and Al-Mn-Si Films," *J. Materials Research* **3** (1988) 1342-1348.
23. M.J. Kaufman, P.W. Voorhees, W.C. Johnson, and F.S. Biancaniello, "An Elastically-Induced Morphological Instability of a Misfitting Precipitate," *Met. Trans*. **20A** (1989) 2171-2176.
24. H.T. Kestner-Weykamp, C.H. Ward, T.F. Broderick, and M.J. Kaufman, "Microstructures and Phase Relationships in the Ti_3Al + Nb System," *Scripta Met*. **23** (1989) 1697-1702.
25. H.T. Weykamp, D.R. Baker, D.M. Paxton, and M.J. Kaufman, "Continuous Cooling

Transformations in the Ti_3Al + Nb System," *Scripta Met.***24** (1990) 445-450.

26. L. Lu, A.B. Gokhale, M.J. Kaufman, and R. Abbaschian, "Nobium Aluminide Matrix Composites Produced by the Reactive Hot Compaction of Elemental Powders," *Power Metallurgy: Key to Advanced Materials Technology*, ASM, (1990) 32-36.
27. J.D. Cotton and M.J. Kaufman, "Microstructural Evolution of Rapidly Solidified Al-Fe Alloys: An Alternative Explanation," *Met. Trans.* **22A** (1991) 927.
28. J.D. Cotton, M.J. Kaufman, and R.D. Noebe, "Constitution of Pseudobinary Hypoeutectic β-NiAl + α-V Alloys," *Scripta Met.* **25** (1991) 1827-1832.
29. T. Laoui and M.J. Kaufman, "Non-Equilibrium Behavior in the Al-Ge Alloy System: Insights into the Metastable Phase Diagram," *Metall. Trans.* **22A** (1991) 2141-2152.
30. J.D. Cotton, Y.S. Kim, and M.J. Kaufman, "Intrinsic Second Phase Particles in Powder-Processed $MoSi_2$," *Mat. Sci. and Engr.* **A144** (1991) 287-291.
31. M.J. Kaufman, A.A. Morrone, and R.E. Lewis, "Complications Concerning TEM Analysis of the δ-AlLi Phase in Aluminum-Lithium Alloys," *Scripta Met.* **27** (1992) 1265-1270.
32. J.D. Cotton, M.J. Kaufman, and R.D. Noebe, "A Simplified Method for Determining the Number of Independent Slip Systems in Crystals," *Scripta Met.* **25** (1991) 2395-2398.
33. M.L. Weaver and M.J. Kaufman, "An Investigation of Al_2Ta and Related Phases in the Ternary Al-Ta-Ti System," *Scripta Met.* **26** (1992) 411-416.
34. S. Jayashankar and M.J. Kaufman, "*In-Situ* Reinforced $MoSi_2$ Composites by Mechanical Alloying," *Scripta Met.* **26** (1992) 1245-1250.
35. S.A. Jones and M.J. Kaufman, "Phase Equilibria and Transformations in Intermediate Titanium Aluminum Alloys," *Acta Metall. et Mater.* **41** (1993) 387-398.
36. J.D. Cotton, R.D. Noebe, and M.J. Kaufman, "The Effects of Chromium on NiAl Intermetallic Alloys: Part I. Microstructures and Mechanical Properties," *Intermetallics* **1** (1993) 3-20.
37. J.D. Cotton, R.D. Noebe, and M.J. Kaufman, "The Effects of Chromium on NiAl Intermetallic Alloys: Part II. Slip Systems," *Intermetallics* **1** (1993) 117-126.
38. S. Jayashankar and M.J. Kaufman, "Tailored $MoSi_2$/SiC Composites By Mechanical Alloying," *J. Materials Research* **8** (1993) 1428-1441.
39. J.D. Cotton, R.D. Noebe, and M.J. Kaufman, "NiAl-Rich Portion of the NiAl-Cr Pseudobinary Eutectic System," *J. Phase Equilibria* **14** (1993) 579-582.
40. M.L. Weaver, M.J. Kaufman, and R.D. Noebe, "The Effects of Alloy Purity on the Mechanical Behavior of Soft Oriented NiAl Single Crystals," *Scripta Met.* **29** (1993) 1113-1118.
41. A. Costa e Silva and M. J. Kaufman, "Microstructural Modification of $MoSi_2$ Through Aluminum Additions," *Scripta Met.* **29** (1993) 1141-1145.
42. A. Costa e Silva and M.J. Kaufman, "Phase Relations in the Mo-Si-C System Relevant to the Processing of $MoSi_2$-SiC Composites," *Met. Trans.* **25A** (1994) 5-15.
43. T. Laoui and M.J. Kaufman, "Metastable Phase Equilibria in Faceted-Nonfaceted Systems," *Scripta Met.* **30** (1994) 1563-1567.
44. A.J. Duncan, M.J. Kaufman, and J.H. Schneibel, "Testing of Soft-Oriented Single Crystals in Simple Shear," *Scripta Met.* **31** (1994) 105-109.
45. P. Krishnan and M.J. Kaufman, "Development and Characterization of Interface Coatings in Molybdenum-Reinforced NiAl Matrix Composites," *Met. Trans.* **25A** (1994) 2111-2116.
46. M.L. Weaver, R.D. Noebe, J.J. Lewandowski, B.F. Oliver, and M.J. Kaufman, "The Effects

of Interstitial Content, Heat Treatment, and Prestrain on the Tensile Properties of NiAl," *Mat. Sci. & Engr.,* **A192/193** (1995) 179-185.

47. A.L. Costa e Silva and M.J. Kaufman, "*In-Situ* Formation of Alumina Coatings in Niobium Toughened $Mo(Si,Al)_2$," *Scripta Met.* **31**, (1994), 853-858.
48. R.E. Reed-Hill and M.J. Kaufman, "On Evaluating the Flow Stress in Niobium of Commercial Purity," *Acta Met.*, **43** (1995), 1731-1739.
49. M.L. Weaver and M.J. Kaufman, "Application of a Method for Determination of the Internal Stress in Polycrystaline NiAl," *Scripta Met.* **31**(6) (1994) 745-750.
50. A.J. Duncan, M.J. Kaufman, C.T. Liu, and M.K. Miller, "Site Occupation of Iron in Intermetallic NiAl," *Appl. Surf. Sci.* **76/77** (1994) 155-159.
51. A.J. Duncan, M.J. Kaufman, and M.K. Miller, "Segregation of Interstitial Impurities in Single Crystal NiAl," *Appl. Surf. Sci.* **76/77** (1994) 160-164.
52. P. Krishnan, A. Costa e Silva, and M.J. Kaufman, "Synthesis of $NiAl/Al_2O_3$ Composites via *In-Situ* reduction of Precursor Oxides," *Scripta Met.* **32** (1995) 839-844.
53. M.L. Weaver and M.J. Kaufman, "Phase Relationships and Transformations in the Ternary Aluminum-Titanium-Tantalum System," *Acta Met.* **43** (1995) 2625-2640.
54. M.L. Weaver, M.J. Kaufman, and R.D. Noebe, "Kinetics of Static Strain Aging in Polycrystalline NiAl-Based Alloys," *Intermetallics* **4** (1996) 121-129.
55. A. Costa e Silva and M.J. Kaufman, "Applications of *In-Situ* Reactions to $MoSi_2$-Based Materials," *Mats. Sci. & Engr.* , **A195** (1995) 75-88.
56. C.V. Iswaran, R.E. Reed-Hill, V.I. Levit, and M.J. Kaufman, "Modeling Flow Stresses and Strain Rate Sensitivities Using Low Temperature Deformation Data," *Scripta Met.*, **32** (1995) 941-947.
57. R.E. Reed-Hill, C.V. Iswaran, and M.J. Kaufman, "A Power Law Model for the Flow Stress and Strain-Rate Sensitivity in CP Titanium," *Scripta Met.*, **33** (1995) 157-162.
58. X.D. Zhang, Y.G. Li, M.J. Kaufman, and M.H. Loretto, "The Structure and Origin of Boundaries Between Antiphase Regions in $L1_0$ Intermetallics," *Acta Metall. et Mater.*, **44** (1996) 3735-3747.
59. X.D. Zhang, S. Godfrey, M.L. Weaver, M. Strangwood, P. Threadgill, M.J. Kaufman, and M.H. Loretto, "The Massive Transformation in Intermediate Ti-Al Alloys: Mechanistic Observations," *Acta Metall. et Mater.*, **44** (1996) 3723-3734.
60. M.L. Weaver, M.J. Kaufman, and R.D. Noebe, "Manifestations of Dynamic Strain Aging in Soft-Oriented NiAl Single Crystals," *Metall. Trans. A*, **27A** (1996) 3542-3557.
61. M.L. Weaver, R.D. Noebe, and M.J. Kaufman, "Observations of Static Strain Aging in Polycrystalline NiAl," *Intermetallics*, **4** (1996) 533-542.
62. V.I. Levit, I.A. Bul, J. Hu, and M.J. Kaufman, "High Tensile Elongation of β-NiAl Single Crystals at 293 K" *Scripta Materialia*, **34** (1996) 1925-1930.
63. M.L. Weaver, R.D. Noebe, and M.J. Kaufman, "The Influence of C and Si on the Flow Behavior of NiAl Single Crystals," *Scripta Materialia.*, **34** (1996) 941-948.
64. M.J. Kaufman, "Discussion of 'A Fully Plastic Microcracking Model for Transgranular Stress Corrosion Cracking in Planar Slip Materials'," *Metall. and Mater. Trans. A,* **27A** (1996) 819-821.
65. T.T. Cheng, X.D. Zhang, Y.G. Li, M.J. Kaufman, I.P. Jones, and M.H. Loretto, "The Structure of Boundaries Between Antiphase Regions in TiAl-Based Alloys," *Phil. Mag. Letts.*,**74** (1996) 51-56.

66. R.E. Reed-Hill, C.V. Iswaran, and M.J. Kaufman, "An Analysis of the Flow Stress of a Two-Phase Alloy System," *Metall. and Mater. Trans. A*, **47** (1996) 1-6.

67. S. Jayashankar and M.J. Kaufman, "Effect of Oxygen Content on the Superplastic Behavior of $MoSi_2$/SiC Composites," *Advanced Synthesis and Processing of Composites and Advanced Ceramics II*, published in Ceramics Transactions, **79**, 163-173, 1996.

68. A.L. Costa e Silva and M.J. Kaufman, "Synthesis of $MoSi_2$-Boride Composites Through *In-Situ* Displacement Reactions," *Intermetallics*, **5** (1997) 1-15.

69. H. Ouyang, W. Shyy, V.I. Levit, and M.J. Kaufman, "Simulation and Measurement of a Vertical Bridgman Growth System for β-NiAl Crystal," *Int. J. Heat Mass Transfer*, **40** (1997) 2293-2305.

70. R.E. Reed-Hill, C.V. Iswaran, and M.J. Kaufman, "Influence of Interstitials on the Mechanical Properties of Metallic Materials," *Metall. and Mater. Trans. A*, **27A** (1996) 3524-3529.

71. R.E. Reed-Hill, C.V. Iswaran, and M.J. Kaufman, "On Determining the Internal Stress Using Hall-Petch Data," *Scripta Met.*, **36** (12) (1997) 1361-1366.

72. A.L. Costa e Silva and M.J. Kaufman, "The Application of Thermodynamics to the In-situ Processing of Aluminum-modified $MoSi_2$ Composites," *Z. Metallkd.* 88 (1997) 854-865.

73. J.B. LeBleu, Jr., P.R. Mei, V.I. Levit, and M.J. Kaufman, "Tensile Properties of NiAl Bicrystals," *Scripta Materialia* **38** (1998) 415-422.

74. V. V. Marchenkov, V. E. Startsev, Yu. N. Gornostyrev, L. Kratzwald, H. W. Weber, D. M. Tagirova, V. I. Levit and M. J. Kaufman: "Effect of dislocations on the high-field magnetoresistivity of compensated metals", Physica B: Condensed Matter, 246-247, 29 (1998) 476-478.

75. Yu. N. Gornostyrev, V.V. Marchenkov, V.I. Levit, M. Kaufman and H.W. Weber, "Effect of Plastic Deformation on the Resistivity and Point-Defect Distribution in the Intermetallic Compound NiAl," *Physics of Metals and Metallography*, 86 (1998) 371-376.

76. Hong-Seok Ko, Hee-Sub Park, Kyung-Tae Hong, Kyung-Sub Lee and M. J. Kaufman: **"**The effects of the point defects on precipitation in NiAlFe alloys , Scripta Materialia, **39**, (1998) 1267-1272

77. X.D. Zhang, J.M.K. Wiezorek, M.J. Kaufman, M.H. Loretto and H.L. Fraser, "Planar Defects in Massively Transformed Ti-Al Alloys," *Phil. Mag. Letters*, **79** (1999) 519-530.

78. N. Bassim, C.S. Kiminami and M.J. Kaufman, "Phases Formed During Crystallization of Amorphous $Al_{84}Y_9Ni_5Co_2$ Alloy" *J. Non-Crystalline Solids*, **273** (2000) 271-276.

79. E.D. Wachsman, S. Boyapati and M.J. Kaufman, "Modeling of Ordered Structures of Phase-Stabilized Cubic Bismuth Oxides," *J. Am. Ceram. Soc.* **83** (2000) 1964-1968.

80. N. Bassim, C.S. Kiminami, M.J. Kaufman, M.F. Oliveira, M.N.R.V. Perdigao, W.J. Botta Filho, "Crystallization Behavior of Amorphous $Al_{84}Y_9Ni_5Co_2$ Alloy," *Mat. Sci. Eng.* **A304-306** (2001) pp. 332-337.

81. Haengjin Ko, K. T. Hong, M. J. Kaufman and Kyung Sub Lee: "Study of precipitation of iron in NiAl by magnetic property measurement" Scripta Materialia, **44** (2001) 423-427.

82. C.R.M. Afonso, C. Bolfarini, C.S. Kiminami, M.J. Kaufman, M.F, Amateau, T.J. Eden, and J.M. Galbraith, "Amorphous Phase Formation During Spray Forming of $Al_{84}Y_3Ni_8Co_4Zr_1$ Alloy, *J. Non-Crystalline Solids*, **284** (2001) 134-138.

83. C.R.M. Afonso, C. Bolfarini, C.S. Kiminami, M.J. Kaufman, M.F, Amateau, T.J. Eden, and J.M. Galbraith, Amorphous Phase Formation in Spray Deposited AlYNiCo and AlYNiCoZr Alloys, *Scripta Materialia* **44** (2001) 1625-1628.

84. M.F. de Oliveira, W.J. Botta, M.J. Kaufman and C.S. Kiminami, "Phases Formed During Crystallization of $Zr_{55}Al_{10}Ni_5Cu_{30}$ Metallic Glass Containing Oxygen", *J. Non-Crystalline Solids*, **304** (2002) 51-55.

85. Y.W. Heo, V. Varadarajan, M.J. Kaufman, K. Kim, D.P. Norton, F. Ren and P.H. Fleming, "Site-Specific Growth of ZnO Nanorods Using Catalysis-Driven Molecular Beam Epitaxy", *Applied Physics Letters*, **81** (2002) 3046-3048.

86. Otubo, J.; Nascimento, F.C.; Mei, P.R.; Cardoso, L.P. and Kaufman, M. "Influence of Austenite Grain Size on Mechanical Properties of Stainless Shape Memory Alloy". *Materials Transactions*, **43** (2002) 916-919.

87. A.C.F.M. Costa, M. Tortella, M.R. Morelli, M.J. Kaufman and R.H.G.A. Kiminami, "Effect of Heating Conditions During Combustion Synthesis on the Characteristics of $Ni_{0.5}Zn_{0.5}Fe_2O_4$ Nanopowders", J. Materials Science, 37 (2002) 3569-3572.

88. H. Kim, M.J. Kaufman, W.M. Sigmund, D. Jacques and R. Andrews, "Observation and Formation Mechanism of Stable Face-Centered-Cubic Nanorods in Carbon Nanotubes", J. Materials Research, **18** (2003) 1104-1108.

89. Y.W. Heo, M. Kaufman, K. Pruessner, K.N. Siebein, D.P. Norton and F. Ren, "ZnO/cubic (Mg,Zn)O Radial Nanowire Heterostructures", *Applied Physics A*, published online, May, 2004 (DOI: 10.1007/s00339-004-2667-1).

90. Y.W. Heo, M. Kaufman, K. Pruessner, D.P. Norton, F. Ren, M.F. Chisholm, P.H. Fleming, "Optical properties of $Zn_{1-x}Mg_xO$ nanorods using catalysis-driven molecular beam epitaxy," Solid-State Electronics 47 (2003) 2269–2273.

91. Matthew J. Olszta, Sivakumar Gajjeraman, Michael J. Kaufman and Laurie B. Gower, "Nano-Fibrous Calcite Synthesized via a Solution-Precursor-Solid (SPS) Mechanism", *Chemistry of Materials*, **16** (2004) 2355-2362.

92. G Lvov, V.I. Levit, and M.J. Kaufman, "Mechanism of Primary MC Carbide Decomposition in Ni-Base Superalloys", *Metallurgical and Materials Transactions*, **35A** (2004) 1669-1679.

93. Matthew J. Olszta, Sivakumar Gajjeraman, Michael Kaufman and Laurie B. Gower, "Nanofibrous Calcite Synthesized via a Solution Precursor-Solid Mechanism", *Chem. Mater.* **16** (2004) 2355-2362.

94. Hansoo Kim, Michael Kaufman and Wolfgang Sigmund "Phase Transition of Iron inside Carbon Nanotubes under Electron Irradiation", *J. of Materials Research* 19, 1835 (2004)

95. G.K. Sigworth, J. Howell, O. Rios and M.J. Kaufman, "Heat Treatment of Natural Aging Aluminum Casting Alloys", *International Journal of Cast Metals Research*, **18** (2005) 1-8.

96. P.D. Eason and M.J. Kaufman, "Impurity Effects on the Environmental Stability of Powder Processed Alumino-Silicide Compounds", *J. Mater. Research*, **20** (2005) 2691-2704.

97. G.K. Sigworth, J. Howell, O. Rios and M.J. Kaufman, "Heat Treatment of Natural Aging Aluminum Casting Alloys", *International Journal of Cast Metals Research*, 19 (2006) 123-129.

98. Matthew J. Olszta, Zingguo Cheng, Sang Soo Jee, Rajendra Kumar, Yi-Yeoun Kim, Michael J. Kaufman, Elliot P. Douglas and Laurie B. Gower: "Bone Structure and Formation: A New Perspective", *Materials Science and Engineering R* **58** (2007) 77-116.

99. Anantha Puthucode, Rajarshi Banerjee, Suman Vadlakonda, Reza Mirshams and Michael J. Kaufman, "Incipient Plasticity and Shear Band Formation in Bulk Metallic Glass Studied Using Indentation", *Metallurgical and Materials Transactions A***39A** (2008) 1552-1559.

100. Anantha Puthucode, Michael J. Kaufman and Rajarshi Banerjee, "Early Stages of Crystallization in Phase-Separated Amorphous Copper-Niobium Alloy Thin Films", *Metallurgical and Materials Transactions A* **39A** (2008) 1578-1584.

101. J.Y. Hwang, H.D. Doty and M.J. Kaufman, "Crystallographic studies on the iron containing intermetallic phases in the 319 type aluminum casting alloys", *Phil Mag*. **88** (2008) 607-619.

102. M.J. Kaufman and V.I. Levit, "Characterization of Chromium Boride Precipitates in the Commercial Superalloy GTD 111 After Long-Term Exposure", *Phil Mag Letters*, **88** (2008) 259-267.

103. Anantha Puthucode, Michael J. Kaufman, Rajarshi Banerjee, "Early Stages of Crystallization in Phase-Separated Amorphous Copper-Niobium Alloy Thin Films", *Metallurgical and Materials Transactions,* **39A** (2008) 1578-1584.

104. Anantha Puthucode, Rajarshi Banerjee, Suman Vadlakonda, Reza Mirshams and Michael J. Kaufman, Incipient Plasticity and Shear Band Formation in Bulk Metallic Glass Studied Using Indentation, *Metallurgical and Materials Transactions,* **39A** (2008) 1552-1559.

105. J.Y. Hwang, H.W. Doty and M.J. Kaufman, "The effect of Mn on the structure and properties of Al–Si–Cu casting alloys", *Materials Science and Engineering: A*, **488** (2008) 496-504.

106. Brian P. Gorman, Anantha Puthucode, David R. Diercks, and Michael J. Kaufman, "Cross-correlative TEM and Atom Probe Analysis of Partial Crystallization in NiNbSn", *Materials Science and Technology* **24** (2008) 682-688.

107. C.S. Kiminami, R.D. Sa Lisboa, M.J. Kaufman, C. Bolfarini, W.J. Botta, "Effects of the addition of SiC on the crystallization of $Al_{84}Ni_8Co_4Y_3Zr$ amorphous ribbons", *J. Non-Crystalline Solids* **354** (2008) 4878-4882.

108. J.Y. Hwang, H.W. Doty and M.J. Kaufman, "The effects of Mg additions on the structure and properties of Type 319 Al casting alloys", *Acta Materialia* **57** (2009) 1308-1317.

109. D.R. Diercks, M.J. Kaufman, A. Needleman, "Simple Method for Estimating Relaxation in Silicon from Higher Order Laue Zone Line Splitting", *Microscopy and Microanalysis* **14** Supplement 52 (2008) 850-851.

110. David Diercks, Michael Kaufman and Alan Needleman, "Convergent Beam Electron Diffraction Measurements of Relaxation in Strained Silicon Using Higher Order Laue Zone Line Splitting", *J. Applied Physics Letters*, **105** (2009) 063526-063526-4.

111. D. Diercks, M. Kaufman, J.W. Weijtmans, R. Wise, R.B. Irwin, A. Jain and L. Robertson, "Convergent Beam Electron Diffraction Measurements of Lattice Strain in Strained Silicon – Higher Order Laue Zone Line Splitting and Relaxation", *J. Applied Physics Letters*, **105**

112. B.P. Gorman, M.J. Kaufman, F.C.S. da Silva and H. Fardi, D.S. Wisbey, J.S. Kline, D. Braje and D.P. Pappas, Epitaxial Growth of (111) Al/Al_2O_3 /Al Trilayers on Sapphire, submitted to *J. Applied Physics* 2009.

113. J.A. Nekuda Malik, M.F.A.M. van Hest, A. Miedaner, C.J. Curtis, J.E. Leisch, P.A. Parilla, M.J. Kaufman, M.P. Taylor, B.J. Stanbery, R.P. O'Hayre, and D.S. Ginley. "Atmospheric Pressure Synthesis of In2Se3, Cu2Se, and CuInSe2 Without External Selenization from Solution Precursors." *Journal of Materials Research*, Volume 24, Number 4. April 2009. Pgs. 1375-1387

114. Nicholas E. McGuire, Neal P. Sullivan, Robert J. Kee, Huayang Zhu, James A. Nabity, Jeffrey R. Engel, David T. Wickham, Michael J. Kaufman, "Catalytic steam reforming of methane using Rh supported on Sr-substituted hexaaluminate, *Chemical Engineering Science,* **64** (2009) 5231-5239.

115. D.R. Diercks, M.J. Kaufman, R.B. Irwin, A. Jain, L. Robertson, .W. Weijtmans and R. Wise, "Using a <670> Zone Axis for Convergent Beam Electron Diffraction Measurements of Lattice Strain in Strained Silicon", *Journal of Microscopy* **239** (2010) 154–158.

116. L. Kovarik, F. Yang, A. Garg, D. Diercks, M. Kaufman, R.D. Noebe and M.J. Mills, "Structural analysis of a new precipitate phase in high-temperature TiNiPt shape memory alloys", *Acta Materialia,* **58** (2010) 4660-4673.

117. F.C.S. da Silva, J.S. Kline, B.P. Gorman, M.J. Kaufman, W.F. Egelhoff Jr., D. Braje, D.S. Wisbey, M.R. Vissers, H. Fardi and D.P. Pappas, "Epitaxial Growth of (111) Al/Al_2O_3 /Al Trilayers on Sapphire", submitted to *J. Applied Physics* 2010.

118. David Diercks, Andrey V. Svalov, Michael Kaufman, Vladimir V. Vas'kovskiy, and Galina V. Kurlyandskaya, "Structure and Electrical Resistivity of Sputtered Tb/Ti and Tb/Si Magnetic Multilayers", *IEEE Transactions on Magnetics - Conference*, 46 (2010) 1515-1518.

119. John W. Gibbs, Michael J. Kaufman, Robert E. Hackenberg and Patricio F. Mendez, "Cooling Curve Analysis to Determine Phase Fractions in Solid-State Precipitation Reactions", *Met. Mat. Trans. A* **41** (2010) 2216-2223.

120. Paul D. Eason, Jason A. Fewkes, Shane C. Kennett, Timothy J. Eden, Karem Tello, Michael J. Kaufman, Murat Tiryakioğlu, On the characterization of bulk copper produced by cold gas dynamic spray processing in as fabricated and annealed conditions, *Mat. Sci. Eng. A,* **528** (2011) 8174-8178.

121. A. Munitz, A. Venkert, P. Landau, M. J. Kaufman and R. Abbaschian, "Microstructure and phase selection in supercooled copper alloys exhibiting metastable liquid miscibility gaps", *J. Materials Science*, 47 (2012) 7955.

122. A. Munitz, M.J. Kaufman, J.P. Chandler, H. Kalaantari and R Abbaschian, "Melt separation phenomena in CoNiCuAlCr high entropy alloy containing silver", *Mat. Sci. Eng. A,* **560** (2013) 633-642.

123. A. Munitz and M.J. Kaufman, "Springback and anelasticity of mg alloys measured in three-point bending. J. Mater. Sci. 2013, DOI 10.1007/s10853-013-7331-8.

Refereed Publications in Conference Proceedings

1. M.J. Kaufman and H.L. Fraser: "Microstructural Analysis of Rapid Solidification and Undercooling in the Al-Ge Alloy System," *MRS Symposium on Rapidly Solidified Crystalline Materials*, eds. B.H. Kear and B.C. Giessen, vol. 39, Elsevier, New York, 1984, pp. 335-342.
2. J.A. Eades, M.J. Kaufman and H.L. Fraser: "Convergent Beam Diffraction in the

Characterization of Crystalline Phases," *MRS Symposium on Materials Problem Solving with the Transmission Electron Microscope,* v. 62, 1986, p. 143.

3. M.J. Kaufman and H.L. Fraser: "Undercooling and Microstructural Evolution in Glass Forming Alloys," *Proc. 1986 Hume Rothery Memorial Symp. on Undercooled Alloy Phases,* E.W. Collings and C.C. Koch (eds.), TMS-AIME press, p. 249.
4. A.J. Melmed, M.J. Kaufman and H.A. Fowler: "Progress in Understanding Atomic Structure of the Icosahedral Phase," *J. de Physique* Colloque C7 (1986) C7-35.
5. M.L. Weaver, S.L. Guy, R.K. Stone and M.J. Kaufman: "An Investigation of Phase Equilibria in the Ternary Ta-Ti-Al System," *MRS Symp. Proc.* **213** (1991) 163.
6. Y.S. Kim, M.R. Johnson, R. Abbaschian and M.J. Kaufman: "Effect of Ceramic Dispersoids on the High Temperature Strength of Mechanically Alloyed $MoSi_2$," *MRS Symp. Proc.* **213** (1991) 839.
7. F.R. Frasier, D.R. Baker and M.J. Kaufman: "Solidification Microstructures and Mechanical Properties of $NbAl_3$-Based Alloys," in *High Temperature Niobium Alloys*, Proc. 1989 TMS Symposium, J.J. Stephens and I. Ahmad (eds.), TMS Press, Warrendale, PA, 1991, pp. 121-134.
8. J.D. Cotton and M.J. Kaufman: "Liquid Phase Separation in RSP Al-Fe-Si Alloys," in *Low Density, High Temperature Powder Metallurgy Alloys*, W.E. Frazier, M.J. Koczak and P.W. Lee (eds.) TMS Conference Proceedings, 1991, pp. 157-168.
9. R.B. Erickson, D.R. Baker and M.J. Kaufman: "Toughness Improvements of $NbAl_3$ Matrix Composites," in *Advanced Composite Materials*, M.D. Sacks (ed.), Ceramic Transactions, v. 19, 1991, pp. 843-849.
10. J.D. Cotton, R.D. Noebe, M.L. Weaver, and M.J. Kaufman: "Ternary Alloy Effects in NiAl," *Proceedings of ISSI Meeting on Structural Intermetallics*, Champion, PA, September, 1993, pp. 513-522.
11. A. Costa e Silva, S. Jayashankar, P. Krishnan and M.J. Kaufman: "Novel Processing of Intermetallic Matrix Composites Using *In-Situ* Displacement Reactions," in *Processing and Fabrication of Advanced Materials for High Temperatures Applications - II*, Proc. 1992 TMS Symposium, (eds.) V.A. Ravi and T.S. Srivatsan (1993), pp. 19-31.
12. A. Costa e Silva and M.J. Kaufman: "Synthesis of $MoSi_2$ Matrix Composites Using *In-Situ* Reactions," in *Processing and Fabrication of Advanced Materials for High Temperatures Applications - III*, Proc. 1993 TMS Symposium, (eds.) V. A. Ravi, T. S. Srivatsan, and J. J. Moore (1994), pp. 585-598.
13. S. Jayashankar, S.E. Riddle, and M.J. Kaufman: "Synthesis and Properties of *In-Situ* $MoSi_2$/SiC Composites," *Mat. Res. Soc. Symp. Proc.*, **322** (1994) 33-40.
14. S.E. Riddle, S. Jayashankar and M.J. Kaufman: "Microstructural Evolution in Compositionally Tailored $MoSi_2$/SiC Composites," *Mat. Res. Soc. Symp. Proc.* **322** (1994) 291-296.
15. Y.J. Lim, K.T. Hong, V. Levit and M.J. Kaufman, "The Influence of Iron on the Physical and Mechanical Properties of ß-NiAl," *Mat. Res. Soc. Symp. on High Temperature Ordered Intermetallic Alloys - VI,* **364**, (1995).
16. J. Hu, V. Levit and M.J. Kaufman, "The Influence of Mo On the Physical and Mechanical Properties of Single Crystalline NiAl," *Mat. Res. Soc. Symp. on High Temperature Ordered Intermetallic Alloys - VI^,* **364**, (1995).
17. A. Costa e Silva and M.J. Kaufman, "The Use of Thermodynamics in the Design of *In-Situ* $MoSi_2$ Composites," in *Processing and Fabrication of Advanced Materials IV*, 1996 TMS Symposium, (eds.) T.S. Srivatsan and J.J. Moore, pp. 755-774.

18. C.V. Iswaran, R.E. Reed-Hill, and M.J. Kaufman, "Concerning the Evaluation of the Internal Stress During Plastic Deformation," Johannes Weertman Symposium, R.J. Arsenault, et al (eds.), TMS Conference Proceedings, Anaheim, CA, February 4-8, 1996, pp. 449-454.
19. V.I. Levit, J. Hu, I.A. Bul, J.S. Winton, and M.J. Kaufman, "Challenges in the Development and Application of β-NiAl as a Structural Material," TMS Proceedings of the Engineering Foundation Conference, Davos, Switzerland, May 1996.
20. E.N. Ross, P.D. Eason, and M.J. Kaufman, "Processing of Low Silica $MoSi_2$-Based Compounds Using Carbon and Aluminum Additions," *Processing and Fabrication of Advanced Materials V*, Proceedings of 1996 Fall TMS Meeting, 347-360, 1996.
21. V.I. Levit and M.J. Kaufman, "Tensile Behavior of β-NiAl: Intrinsic vs. Extrinsic Properties," International Symposium on Structural Intermetallics Proceedings, 1997.
22. V.I. Levit, J.S. Winton, Yu. N. Gornostyrev and M.J. Kaufman, "Mechanisms of High Tensile Elonggation in NiAl Single Crystals at Intermediate Temperatures," Proc. Of ReX'96, The Third International Conference on Recrystallization and Related Phenomena, 637-644 (1997).
23. A.V. Kaptsan, Yu. N. Goirnostyrev, V.I. Levit and M.J. Kaufman, "Simulation of Grain Boundary Instabilities During Hot Straining," Proc. Of ReX'96, The Third International Conference on Recrystallization and Related Phenomena, 571-578 (1997).
24. M.F. Amateau, T.J. Eden, J.M. Galbraith, E.J. Fodran and M.J. Kaufman, "Microstruuctuure and Mechanical Properties of a Spray Formed Al-Fe-V-Si Alloy," Third Pacific Rim International Conference on Advanced Materials and Processing, TMS, 1645-1652 (1998).
25. M.C. Alves da Silva, C. Bolfarini, C.S. Kiminami, R. Machado and M.J. Kaufman, "Magnetic Properties of Spray Formed Fe-6wt%Si Alloy," Key Engineering Materials, 189-191 (2001) pp. 643-648.
26. C.S. Kiminami, N.D. Bassim, M.J. Kaufman, M.F. Amateau, T.J. Eden, and J.M. Galbraith, "Challenges in the Development of Aluminum-Based Bulk Amorphous Alloys," Key Engineering Materials, 189-191 (2001) pp. 503-508.
27. C.R.M. Afonso, C.S. Kiminami, C. Bolfarini and M.J. Kaufman, "Microstructural Characterization of Spray Co-Deposited Al-Y-Ni-Co-Zr + SiC Composite", Proceedings of EUROMAT 2001, Rimini, Italy, 10-14 July, 2001.
28. C.R.M. Afonso, C. Bolfarini, C.S. Kiminami, M.J. Kaufman, M.F, Amateau, T.J. Eden, and J.M. Galbraith, Proc. XII Inter. Symp. On Non-Oxide Glasses and Adv. Mater., Florianopolis, (2000), Brazil.
29. C.S. Kiminami, N. Bassim, M.J. Kaufman, M.F. Oliveira, M.N.R.V. Perdigao and F.W.J. Botta, Proc. 10th Int. Conf. On Rapidly Quenched and Metastable Materials, Bangalore (1999) India.
30. C.R.M. Afonso, C. Bolfarini, C.S. Kiminami, M.J. Kaufman, M.F, Amateau, T.J. Eden, and J.M. Galbraith, Proc. Of NANO 2000, Sendai, Japan (2000).
31. Y.W. Heo, V. Varadarajan, M.J. Kaufman, K. Kim, F. Ren, P.H. Fleming and D.P. Norton, "Deterministic Synthesis of ZnO Nanorods", Proceedings of the Materials Research Society Spring Meeting, 2002.
32. O.D. Rigo, J. Otubo, C. Moura Neto, M. Kaufman, and P.R. Mei, "New technique to determine martensitic transformation temperature with image captures by scanner in NiTi shape memory alloy", MICROMAT 2000, 7th Materials Microscopy Brazilian Congress, São Pedro, SP, 2000.

33. J. Otubo, O.D. Rigo, C. Moura Neto, M. Kaufman, and P.R. Mei, "Scale up of NiTi shape memory alloy production by EBM". International Conference on Martensitic Transformation - ICOMAT 2002, Helsinki University of Technology, Espoo, Finland, 2002.
34. O.D. Rigo, J. Otubo, C. Moura Neto, M. Kaufman, and P.R. Mei, "The Effect of Graphite Crucible Quality and its Dimension on Degree of Carbon Contamination in VIM Processed NiTi Shape Memory Alloy", Resumos do 15 Congresso Brasileiro de Engenharia e Ciencia dos Materiais, 09 a 13 de novembro de 2002, Natal, RN, p. 01-01 (CD-ROM).
35. O.D. Rigo, J. Otubo, C. Moura Neto, M. Kaufman, and P.R. Mei, "The Use of Ceramic Filter for TiC Removal from NiTi Shape Memory Alloy During Pouring", Resumos do 15 Congresso Brasileiro de Engenharia e Ciencia dos Materiais, 09 a 13 de novembro de 2002, Natal, RN, p. 01-01 (CD-ROM).
36. J. Otubo, O.D. Rigo, C. Moura Neto, M. Kaufman, and P.R. Mei, "NiTi Shape Memory Alloy Ingot Production by EBM", Resumos do 15 Congresso Brasileiro de Engenharia e Ciencia dos Materiais, 09 a 13 de novembro de 2002, Natal, RN, p. 01-01 (CD-ROM).
37. F.F. Machado, E.J. Fodran, M.J. Kaufman and RHGA Kiminami, "Preparation of ZnO Nanopowder by Freeze Drying", Metastable and Nanostructured Materials – Nanomat 2001, Proceedings Materials Science Forum, 403 (2002) 71-76.
38. M.F. de Oliveira, M.J. Kaufman, W.J. Botta and C.S. Kiminami, "The Big-Cube Phase Found in Zr-Cu-Al-Ni Easy Glass Forming Alloys", Metastable and Nanostructured Materials – Nanomat 2001, Proceedings Materials Science Forum, 403 (2002) 101-106.
39. M.F. de Oliveira, M.J. Kaufman, W.J. Botta and C.S. Kiminami, "Glass Formation of Containerless Levitated Zr55Al10Ni5Cu30 Alloy Containing Oxygen", Metastable, Mechanically Alloyed and Nanocrystalline Materials – Materials Science Forum, 386-3 (2002) 53-58.
40. C.R.M. Afonso, C.S. Kiminami, C. Bolfarini and M.J. Kaufman, "Microstructural Characterization of Spray Deposited Al-Y-Ni-Co-Zr Alloy and Al-Y-Ni-Co-Zr+SiCp Metal Matrix Composite", Metastable and Nanostructured Materials – Nanomat 2001, Proceedings Materials Science Forum, 403 (2002) 95-100.
41. K. Pruessner, Y.W. Heo, M.J. Kaufman, M.F. Chisholm and D.P. Norton, "TEM Characterization of MBE-Grown Core/Shell (Zn,Mg)O Nanowires," Proc. Electrochemical Soc. (2004) 550-554.
42. Erik Mueller, Kevin Kloske, Michael Kaufman, Vladimir Levit, "EBSD Characterization of the Scale that Forms on Directionally Solidified PWA 1483 Castings", Proc. TMS Conference – TMS Letters, New Orleans, LA, 2004.
43. Brian P. Gorman, Michael J. Kaufman, Matt M. Nowell, Seokhyun Yoon and Tim Anderson, "Grain Boundary Studies in $CuInGaSe_2$ Using EBSD in the Dual Beam FIB", *Microscopy and Microanalysis 2005*, 508 (2005).
44. Brian P. Gorman and Michael J. Kaufman, "The North Texas Advanced Research and Technology Institute: Instrumentation for Materials Characterization and Education", *Microscopy and Microanalysis*, 12 [2] (2006) 1706CD.
45. Brian P. Gorman, David Diercks, Michael Kaufman, Rob Ulfig, Dan Lawrence, Keith Thompson, and David J. Larson, "Atomic Scale Compositional and Structural

Characterization of Nanostructured Materials Using Combined FIB, STEM, and LEAP", *Microscopy and Microanalysis*, 12 [2] (2006) 1720CD.

46. J Hwang, R Banerjee and M Kaufman (2008) "Characterization of Precipitation Behavior in a Spray-Formed Al-Zn-Mg Alloy Using a Combination of Transmission Electron Microscopy and Three Dimensional Atom Probe Tomography", *Microscopy and Microanalysis*, 14 (Suppl. 2), pp 1240-1241.

47. F.C. S. Da Silva B.P. Gorman, M. J. Kaufman, H. Fardi, D.S. Wisbey, J.S. Kline, D. Braje, and D.P. Pappas, "Epitaxial Growth of (111) Al/Al2O3 Trilayers on Sapphire," American Physical Society, volume 55, no. 2, March 15-19, 2010, Portland, Oregon.

Non-refereed Publications

1. M.J. Kaufman and H.L. Fraser: "Structure Determination of Ni_3Mo Using Convergent Beam Electron Diffraction," *40th Ann. Proc. Electron Microscopy Soc. Amer.,* Washington, DC, 1982, G.W. Bailey (ed.), p. 686-687.
2. M.E. Twigg, A.J. Melmed, R. Klein, M.J. Kaufman and H.L. Fraser: "A Microanalytical Study of Secondary Precipitation in RSR 143 Using Atom Probe Field Ion Microscopy and Analytical Transmission Electron Microscopy," *Proc. 5th Int. Conf. on Superalloys,* M. Gell, C.S. Kortovich, R.G. Brichnell, W.B. Kent and J.F. Radavich (eds.) 1984, p.631.
3. A.J. Melmed, M.E. Twigg, R. Klein, M.J. Kaufman and H.L. Fraser: "The Complementary Use of Atom Probe Field Ion Microscopy and Analytical Transmission Electron Microscopy for the Study of a Ni-Base Superalloy," *J. de Physique,* **45** No. 12, C9-373-C9-378.
4. M.J. Kaufman: "Characterization of Stable and Metastable Phases Using Analytical Electron Microscopy," *MRS Symposium on Alloy Phase Diagrams* (extended abstracts) L.H. Bennett, B.C. Giessen and T.B. Massalski (eds.), 1984, p. 62. C9, 1984, p. C9-373 - C9-378.
5. M.J. Kaufman, J.T. Stanley, D.C. Van Aken, R.D. Field and H.L. Fraser: "Microstructure of Some Rapidly Solidified Al-Base Alloys," *Rapidly Quenched Metals,* S. Steeb and H. Warlimont (eds.), 1985, p. 941-944.
6. M.J. Kaufman and E.N. Pugh: "A New Approach to Improving Resistance to Transgranular Stress Corrosion Cracking," *Proc. of U.S.A.-Japan Seminar on Critical Issues in Reducing the Corrosion of Steels,* H. Leidheiser, Jr. and S. Haruyama (eds.), 1985, p. 250-261.
7. M.J. Kaufman: "Conventional CBED: An Overview," *Analytical Electron Microscopy-1987,* D.C. Joy (ed.) (1987) p. 121.
8. M.J. Kaufman: "Phase Relations in the Ti_3Al + Nb System," AFWAL-TR-88-4113, Final Report for the Period February 1987 to October 1987, USAF F33601 87 M4037, July 1988.
9. M.J. Kaufman, T.F. Broderick, C.H. Ward, J.K. Kim, R.G. Rowe and F.H. Froes: "Phase Relationships in the Ti_3Al + Nb System," in Sixth World Conference on Titanium, P. Lacombe, R. Tricot and G.Beranger, eds. (Les Ulis Cedex, France: les editions de phisique, 1989).p. 1103.
10. K.A. Kojima, R.E. Lewis and M.J. Kaufman: "Microstructural Characterization and Mechanical Properties of a Spray-Cast Al-Li-Cu-Mg-Zr Alloy," *Aluminum-Lithium Alloys*, Proc. Fifth Int. Aluminum-Lithium Conf., Eds. T.H. Sanders, Jr. and E.A. Starke, Jr., Materials and Component Engineering Publications Ltd., Birmingham, UK, 1989, pp. 85-94.
11. F.R. Frasier and M.J. Kaufman: "Structure-Property Relationships in $NbAl_3$-Based Alloys," in *HITEMP II*, 1989, p 24-1.
12. S.M. Pierik, D.R. Baker and M.J. Kaufman: "Preliminary Interfacial Study on NiAl-Matrix Composites," TMS proceedings of symposium held in Indianapolis, October, 1989.
13. R.E. Erickson, D.R. Baker and M.J. Kaufman: "Microstructural Development and Second

Phase Toughening of $NbAl_3$," in *HITEMP III,* 1990, p. 22-1 - 22-8

14. Richard E. Lewis, Al T. Davinroy and Michael J. Kaufman: "Microstructural and Property Improvements in 7075 and 8090 Aluminum Alloys by Spray Forming," *Proc. 1991 Powder Metallurgy in Aerospace and Defense Technologies Symposium,* Tampa, FL, March 3-6, 1991, Metal Powder Industries Federation, Princeton, NJ.
15. J.D. Cotton, M.J. Kaufman, R.D. Noebe and M.K. Behbehani: "The Potential for Ductility Enhancement in Polycrystalline NiAl through Slip System Modification by Macroalloying," *HITEMP IV*, October, 1991, pp. 23-1 - 23-18.
16. C.S. Kiminami, N.D. Bassim, M.J. Kaufman, M.F. Amateau, T.J. Eden, and J.M. Galbraith, "Challenges in the Development of Aluminum-Based Bulk Amorphous Alloys," *Key Engineering Materials,* 189-191 (2001) pp. 503-508.
17. M.C. Alves da Silva, C. Bolfarini, C.S. Kiminami, R. Machado and M.J. Kaufman, "Magnetic Properties of Spray Formed Fe-6wt%Si Alloy," *Key Engineering Materials*, 189-191 (2001) pp. 643-648.
18. Brian P. Gorman, David Diercks, Michael Kaufman, Rob Ulfig, Dan Lawrence, Keith Thompson, and David J. Larson, "Atomic Scale Compositional and Structural Characterization of Nanostructured Materials Using Combined FIB, STEM, and LEAP", Microscopy and Microanalysis 2006, Chicago, IL, July 30 – August 3, 2006.
19. DR Diercks and MJ Kaufman (2008). Comparison of Zone Axes for Convergent Beam Electron Diffraction Strain Measurements of a Strained Silicon Transistor. Microscopy and Microanalysis, 14 (Suppl. 2), pp 852-853.
20. G.A. Hudish, M.J. Kaufman, A. Garg and R. Noebe, "Characterization of a Ti-Ni-Pt High Temperature Shape Memory Alloy", *11th International Conference on Advanced Materials (ICAM 2009)*, Rio De Janeiro, Brazil, September 2009.
21. D.L. Olson, J.E. Jackson, B. Mishra, M.J. Kaufman, A.N. Lasseigne-Jackson, R.B. Thompson, A. Landau and M. Pinkas, "Generation II Materials Science for Welds and Advanced Materials", *Trends in Welding Research, Proc. of 8th Int. Conf.,* S. David, T. DebRoy, T. Koseki and H. Smartt, eds. 2009, pp. 35-44.
22. JP Chandler, A Manerbino, S Liu and M Kaufman (2008). Characterization of the Interfacial Regions of Copper-Carbon Steel Explosive Welds Using a Combination of Analytical Techniques. *Microscopy and Microanalysis*, 14 (Suppl. 2) , pp 1090-1091.
23. D Diercks, G Lian, J Chung and M Kaufman (2010). Direct Comparison of Convergent Beam Electron Diffraction and Geometric Phase Analysis for Local Strain Measurement. *Microscopy and Microanalysis*, 16 (Suppl. 2) , pp 742-743.

Invited Talks

- Characterization of Stable and Metastable Phases Using Analytical Electron Microscopy - MRS Annual Meeting, Boston, MA 1984.
- Application of Convergent Beam Electron Diffraction to Materials Characterization - National Bureau of Standards Microscope Users Meeting, October, 1985.
- The Restraining Effect of Cleavage Ligaments in Transgranular Stress Corrosion Cracking of FCC Alloys - Second Int. Conf. on Fundamentals of Fracture, Gatlinburg, TN, November, 1985 (with E.N. Pugh, A.J. Forty and R.M. Thomson).
- Conventional CBED: An Overview - Workshop on Analytical Electron Microscopy, Kona, Hawaii, July, 1987.
- Symmetry and Crystal Structure Determination Using CBED - 1987 TMS Fall Meeting, Cincinnati, Ohio, October, 1987.
- Characterization of Fine Powders in the Analytical Electron Microscope - 1988 TMS Fall

Meeting, Chicago, Illinois, September, l988.

- Phase Transformations in Ti_3Al-Based Alloys - Workshop on Titanium Aluminides, Stratford, Connecticut, November, l988.
- Processing of Advanced Intermetallics - 1989 TMS Fall Meeting, Indianapolis, Indiana, October, 1989.
- Processing of Intermetallics and Intermetallic Matrix Composites - 1989 Winter ASME Meeting, San Francisco, California, December, 1989.
- Microstructural Evolution in TiAl-Based Alloys - *AeroMat '91*, May, 1991.
- Phase Transformations in Ti-Al and Ti-Al-Ta Alloys - *AeroMat '92*, May, 1992.
- Advances in Understanding Microstructural Evolution and Coarsening in Al-Fe Based Alloys - *AeroMat '92*, May, 1992.
- Novel Processing of Intermetallic Matrix Composites Using In-Situ Displacement Reactions - 1992 TMS Fall Meeting, Chicago, Illinois, October, 1992.
- Intermetallic and Intermetallic Matrix Composites: Next Generation Aerospace Materials? - ASM International Central Florida Chapter Meeting, Orlando, Florida, September, 1993.
- Intermetallic and Intermetallic Matrix Composites: Next Generation Aerospace Materials? - Presented at the University of Florida, Department of Aerospace Engineering, Gainesville, Florida, September, 1993.
- Solid-State Displacement Reactions in the Synthesis of $MoSi_2$ Matrix Composites - 1994 TMS Spring Meeting, March, 1994.
- Structural Intermetallics: Limitations and Opportunities – 2000 CEBIMAT, Brazil, December, 2000.
- Microstructural Evolution in γ-TiAl Alloys: Mechanisms and Implications – 2000 CEBIMAT, Brazil, December, 2000.
- Convergent Beam Electron Diffraction in the 21st Century –FSEM, Orlando, FL, March, 2003
- High Temperature Shape Memory Alloys – September, 2003, University of Pennsylvania
- Amorphous and Nanocrystalline Alloys for Structural Applications – 2004 Conference on Nanotechnology, Seoul, South Korea
- 3-D Tomography at Different Length Scales – NanoMat Conference, Rio De Janiero, Brazil, 2006.
- Conventional and Bulk Metallic Glasses: Challenges and Opportunities, Materials Far from Equilibrium Conference, Mumbai, India, December 2006.
- Trends in Atomic-Scale Metrology at the University of North Texas, presented at Zyvex Corporation, 2007.
- Convergent Beam Electron Diffraction in Materials Science, presented at the joint Rocky Mountain Chapter of the American Society of Metals and Mountain States Society of Electron Microscopists and Colorado Microbeam Analysis Society, April 2008.
- Convergent Beam Electron Diffraction in Materials Science, departmental seminar at the University of Florida, Department of Materials Science and Engineering, August, 2008.
- Characterization of Phase Transformations in Structural Materials in Extreme Conditions, presented at workshop on MaRIE (Matter Radiation Interactions Under Extremes) Los Alamos National Laboratory, July 2009.

- Characterization of Phase Transformations in the Ti-Pt and Ti-Ni-Pt Systems, presented at Korean Institute of Materials Science, Changwon, S. Korea, March 2011.
- Characterization of Phase Transformations and Complex Structures in High Temperature Ti-Pt and Ti-Ni-Pt Shape Memory Alloy Systems, presented at SBPMat in Gramado, Brazil, September 2011.
- Microstructure-Property-Processing Relationships in Co-Cr-Cu-Fe-Ni-Al High Entropy Alloys, Nanomat, Sao Carlos, Brazil, October 2012.1
- Microstructure-Property-Processing Relationships in a Series of Al-Cr-Fe-Mn-Ni High Entropy Alloys, presented at Annual TMS meeting in San Antonio, TX, March 2013.
- Liquid Phase Separation in Transition Element High Entropy Alloys, presented at Annual TMS meeting in San Antonio, TX, March 2013.

Funding History

Multiple federal grants totaling around $7 M
Congressional funding at UNT totaling approximately $15 M
Multiple private industry grants totaling around $500,000

Advising History

PhD	**Placement**
T. Laoui	Faculty, King Fahd University of Petroleum and Minerals
J. Cotton	Boeing Aerospace Company
M. Weaver	University of Alabama (associate professor)
A. Duncan	Westinghouse Savannah River
S. Jayashankar	Seagate Magnetic Storage
A. Costa e Silva	Brazil Nuclear Agency
J. Dobbs	Benedict Engineering
K. Sohn	Professor, Inje University, S. Korea
Y. Lim	Korean businessman
J. Hu	Auburn University (post-doc)
T. Adams	Westinghouse Savannah River
E. Ross	Pratt & Whitney
P. Eason	Zook-Moore Consulting Firm (recently started E4 Consulting)
L. Dempere	Univ. Florida Major Analytical Instrumentation Center (Director)
E. Fodran	Norththrup-Grumman
G. Bourne	Instructional Faculty, Colorado School of Mines
J. Kim	LG Electronics, Seoul, S. Korea
J. Huang	Korean Institute of Science and Technology, Seoul, S. Korea
D. Diercks	Research Faculty, Colorado School of Mines
W. Garrett	Engineer, ATK
K. Tello	Professor,Universidad Técnica Federico Santa María, Chile
J. Tsai	Post-doc, Colorado School of Mines
M.S.	
S. Jones	Louisville Slugger
K. Kojima	Hard Disk Company

S. Pierik	Owens Corning
H. Weykamp	Alcoa
R. Frasier	Cloyes Gear Company
D. Yuan	Northwest Aluminum
P. Dewo	Foundry in Indonesia
S. Riddle	Electronics company in Texas
A. Duncan	PhD
M. Weaver	PhD
D. Paxton	Battelle Pacific Northwest Laboratories
J. Winton	Intel
P. Krishnan	California microelectronics company
I. Bul	California microelectronics company
Z. Fu	Nuclear Regulatory Commission
R. Erickson	Alcoa, MBA school
T. Cheek	Navistar Truck Company, now consulting company
N. Bassim	UF PhD program (now post-doc at NIST)
K. Kloske	Pratt & Whitney
T. Jacobs	Jacobs Engineering Consultants
E. Mueller	UF PhD program – Naval Aviation Depot, Jacksonville, FL
Y. Kuang	Private company in Orlando, Fl
A. Puthucode	Heat treating company in Las Vegas, NV
G. Hudish	CSM PhD program
J. Gibbs (co-advisor)	Los Alamos National Laboratory
S. Griffiths (co-advisor)	Boeing
R. Madland (co-adv)	Solar Turbines
S. Cochran	Solar Turbines

B.S.

Advisor for numerous students doing senior projects, senior design, etc. Also, had numerous undergraduates working in my laboratory over the years.