

Andrea Maria Hodge

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PRESENT POSITION:

Arthur B. Freeman Professor
Chair Department of Chemical Engineering and Materials Science
Department of Aerospace and Mechanical Engineering
University of Southern California

Co-Director USC Materials Consortium

EDUCATION:

Ph.D. in Materials Science and Engineering, December 2002
Northwestern University, Evanston, IL, Advisor: David C. Dunand

B.S in Mechanical Engineering, May 1997
University of Nevada, Las Vegas, NV

GENERAL RESEARCH INTERESTS:

Nanocrystalline materials processing, thin and thick film coatings, multilayers synthesis, corrosion, biomaterials, nanomechanics, hierarchical materials processing, grain boundary engineering.

PREVIOUS EXPERIENCE:

Vice Provost for Undergraduate Programs, University of Southern California
(7/2016 – 6/2020)

Co-Director Center for Excellence in Nano Imaging (CNI), University of Southern California
(7/2019 – 6/2022)

Director of the Materials Science Program, University of Southern California
Chemical Engineering and Materials Science Department (01/16 – 06/17)

Associate Professor with tenure, University of Southern California
Department of Aerospace and Mechanical Engineering, (5/13 - 11/15)

Assistant Professor, University of Southern California
Department of Aerospace and Mechanical Engineering, (8/07-5/13)

Staff Scientist, Lawrence Livermore National Laboratory
Materials Science and Technology Division, (1/04-8/07)

Post-Doctoral Fellow, Lawrence Livermore National Laboratory, Materials Science and technology Division, (08/02-12/03)

Graduate Research Assistant, Northwestern University, Materials Science Department, Evanston, IL (09/97-06/02)

Engineer Intern, NASA Glenn Research Center- Cleveland, OH (09/01-12/01) Advisor: Michael V. Nathal

Undergraduate Researcher, National Science Foundation Research Fund – University of Nevada, Las Vegas, NV (06/96-08/96)

PROFESSIONAL MEMBERSHIPS:

Materials Research Society (MRS)

The Minerals, Metals and Materials Society (TMS)

Society of Hispanic Professional Engineers (SHPE)

American Society of Metals (ASM)

American Society for the Advancement of Science (AAAS)

SELECTED HONORS/AWARDS:

TMS Ellen Swallow Richards Diversity Award	2023
TMS Julia and Johannes Weertman Educator Award	2020
Hanna Reisler Mentoring Award	2018
Early Career Achievement Award, Northwestern University	2016
Keynote Speaker, Hilliard Symposium, Northwestern University	2014
Viterbi Junior Faculty Research Award	2013
Diverse Education Emerging Scholar (National Award)	2013
DARPA Young Faculty Award (YFA)	2012
ONR Young Investigator Program (YIP) Award	2012
Alexander von Humboldt Senior Research Fellow (Germany)	2011
NSF CAREER Award	2010
NSF BRIGE Award	2008
Excellence in Publication award (LLNL)	2006
TMS Young Leader Award	2004
Crown Graduate Internship	2001
Amelia Earhart Fellowship	2000-01
NSF Graduate Fellowship	1997-00
Walter P. Murphy Fellowship	1997-98
National Hispanic Engineer of the Year- Student (National Award)	1996-97
NASA Scholarship	1996

VISITING/GUEST SCIENTIST POSITIONS:

Institute of Nanotechnology, Karlsruhe Institute of Technology, June 2010.

National Institute for Materials Science (NIMS), Tsukuba, Japan March 2010

INVITED BOOK CHAPTERS:

A.M. Hodge and J.T. Balk., *Mechanical properties of nanoporous gold* in “Nanoporous Gold: From an Ancient Technology to a High-Tech Material” Edited by Arne Wittstock, Jurgen Biener, Jonah Erlebacher and Marcus Baumer, RSC Nanoscience & Nanotechnology No. 22 Royal Society of Chemistry 2012.

J.Biener, **A.M. Hodge** and A.V. Hamza, *Deformation behavior of nanoporous materials* in “Micro and Nano Mechanical Testing of Materials and Devices” Edited by Professor F. Yang of University of Kentucky and Professor J.C.M. Li of University of Rochester, Springer 2008.

JOURNAL PUBLICATIONS (Peer-reviewed) *h-index* = 43 (web of science), 46 (google scholar) Web of Science Researcher ID: AAX-1898-202

1. K. Russell, C. Killeen, N.J. Peter, R. Schwaiger, J.R. Trelewicz, A.M. Hodge “Microstructure and thermal stability of crystalline/amorphous Fe/FeW nanomultilayers” *Scripta Materialia*, 242, 115962, (2024)
2. D.C. Goodelman, M.E. Kassner, A.M. Hodge “Magnetron Sputtering as a Microstructural Screening Tool for Laser Additive Manufacturing: Study on Ni Superalloys, *Advanced Engineering Materials*, 2301585, (2024)
3. A. Liang, D.C. Goodelman, **A.M. Hodge**, D. Farkas, P. Branicio “CoFeNiTi_x and CrFeNiTi_x high entropy alloy thin films microstructure formation” *Acta Materialia*, 257, 119163, (2023) DOI: 10.1016/j.actamat.2023.119163.
4. D.C. Goodelman, **A.M. Hodge** “Distribution of nanodomains in heterogeneous Ni-superalloys: effect on microstructure and mechanical deformation” *Acta Materialia*, 252, 118940, (2023)
5. D. White, C.D. Appleget, E. Rossi, M. Sebastiani, **A.M. Hodge** “The mechanical performance of optically tuned ceramic nanomultilayers” *Materials & Design*, 231, 112014, (2023) DOI: 10.1016/j.matdes.2023.112014
6. K.D. Hemmendinger, **A.M. Hodge** “Progression of the dealloying front in bilayer Cu-Al and Cu-Zn nanoporous foams”, *Journal Materials Research*, 1-9, (2023).

7. A. Alwen, **A.M. Hodge** “Correlation between sputtering target geometry, plasma characteristics, and film microstructure” *Materials Research Express*, DOI: 10.1088/2053-1591/acb31a
8. W. S. Cunningham, Sean T. J. Mascarenhas, J. S. Riano, W. Wang, S. Hwang, K. Hattar, A.M. Hodge, J.R. Trelewicz “Unraveling Thermodynamic and Kinetic Contributions to the Stability of Doped Nanocrystalline Alloys using Nanometallic Multilayers” *Advanced Materials*, 2200354 (2022).
9. C. D. Appleget, J.S. Reano, **A.M. Hodge**, “An Overview of Nano Multilayers as Model Systems for Developing Nanoscale Microstructures” *Materials*, 15(1), 382, (2022)
10. D.C. Goodelman, D.E. White, **A.M. Hodge** “Phase Transition Zones in Compositionally Complex Alloy Films Influenced by Varying Al and Ti Content” *Surface and Coatings Technology*, 424, 127651, (2021)
11. M.G. Eberhardt, **A.M. Hodge**, P.S. Branicio "Atomistic Modeling of Physical Vapor Deposition on Complex Topology Substrates” *Computational Materials Science*, 203, 111111 (2021).
12. A.R. Garcia-Taormina, C.M. Kurpiers, R. Schwaiger, **A.M. Hodge** “Coatings for Core-shell Composite Micro-lattice Structures: Varying Sputtering Parameters” *Advanced Engineering Materials*, 24 (4), 2101264 (2021).
13. A.R. Garcia-Taormina, A. Alwen, R. Schwaiger, A.M. Hodge “A Review of Coated Nano- and Micro-Lattice Materials” *Journal of Materials Research*, 36, 3607-3627 (2021).
14. K.D. Hemmendinger, J.A. Bahena, **A.M. Hodge** “Characterization of Grain Boundary Engineered Aluminum-Magnesium Alloy”, *Advanced Engineering Materials*, 2000813, DOI: 10.1002/adem.202000813 (2020).
15. J.A. Bahena, T. Juarez, L. Velasco, **A.M. Hodge** “Grain Boundary Evolution of Highly Nanotwinned Alloys: Effect of Initial Twinned Microstructure”, *Scripta Materialia*, 190, 27-31 DOI:10.1016/j.scriptamat.2020.08.024 (2020).
16. C.D. Appleget, **A.M. Hodge** “Exploring Microstructural Variations in Highly Transparent AlN/SiO₂ Nano Multilayers” *Optical Materials Express*, 10, 850-859, DOI:10.1364/OME.389156, (2020).
17. C.D. Appleget, **A.M. Hodge** “Synthesis and characterization of optically transparent ceramic crystalline/amorphous and amorphous/amorphous multilayers” *Scripta Materialia*, 187, 157-162 (2020).
18. J.A. Bahena, N.M. Heckman, C.M. Barr, B.L. Boyce, **A.M. Hodge** “Development of a heterogenous nanostructure through abnormal recrystallization of a nanotwinned Ni superalloy” *Acta Materialia* 195, 132-140 DOI: 10.1016/j.actamat.2020.05.057(2020).

19. A.Saenz, **A.M. Hodge** “Nanomaterials by Design: A Review Nanoscale Metallic Multilayer” *Nanotechnology* 31, 292002 -DOI: [10.1088/1361-6528/ab803f](https://doi.org/10.1088/1361-6528/ab803f) (2020).
20. A.R. Garcia-Taormina, T. Juarez, J.S. Oakdale, J. Biener, **A.M. Hodge** “Scaling-up of Nano-architected Micro-Structures: A Mechanical Assessment” *Advanced Engineering Materials*, DOI: 10.1002/adem.201900687, (2019).
21. J.S. Riaño, **A.M. Hodge** “Exploring the Thermal Stability of a Bimodal Nanoscale Multilayered System” *Scripta Materialia* DOI: 10.1016/j.scriptamat.2019.02.043, (2019).
22. C.D. Appleget, **A.M. Hodge** “Optical and Mechanical Characterization of Sputtered AlN/Ag Multilayer Films” *Advanced Engineering Materials*, DOI: 10.1002/adem.201801268, (2019).
23. J.A.Bahena, J.S.Riano, M.R.Chellali, T. Boll, **A.M. Hodge** “Thermally Activated Microstructural Evolution of Sputtered Nanostructured Mo-Au” *Materialia*, 4, 157-165 (2018).
24. J.S. Riano, **A.M. Hodge**, “Phase transformations in the W-Cr system at the nanoscale” *Materialia*, DOI: 10.1016/j.mtla.2018.07.021, (2018).
25. I-Chung Cheng, J. P. Kelly, E. Novitskaya, V. Eliasson, **A.M. Hodge**, and O.A. Graeve “Mechanical Properties of an Fe-Based SAM2X5-630 Metallic Glass Matrix Composite with Tungsten Particle Additions” *Advanced Engineering Materials* <https://doi.org/10.1002/adem.201800023> (2018).
26. T. Juarez, A Schroer, R. Schwaiger, **A. M. Hodge** “Evaluating sputter deposited metal coatings on 3D printed polymer micro-truss structures” *Materials and Design*, [Volume 140](#), 15 February 2018, Pages 442-450.
27. N. M. Heckman, M. F. Berwind, C. Eberl, **A. M. Hodge** “Microstructural Deformation in Fatigued Nanotwinned Copper Alloys” *Acta Materialia*, 144, 138-144 (2018).
28. J. Yan, A. Lindo, R. Schwaiger, **A. M. Hodge** “Sliding wear behavior of fully nanotwinned Cu alloys” *Friction*, DOI: 10.1007/s40544-018-0220-z, (2018).
29. T. Juarez, J. Biener, J. Weissmüller, **A. M. Hodge** “Nanoporous Metals with Structural Hierarchy: A Review” *Advanced Engineering Materials*, Volume 19, Issue 12, December (2017).
30. L. Velasco, **A. M. Hodge** “Growth twins in high stacking fault energy metals: Microstructure, texture and twinning” *Materials Science and Engineering A*, Volume: 687 Pages: 93-98 (2017).

31. J. Yan, **A. M. Hodge** “Study of β precipitation and layer structure formation in Al 5083: The role of dispersoids and grain boundaries” *Journal of Alloys and Compounds*, **703**, Pages: 242-250, (2017).
32. N. Heckman, L. Velasco, **A.M. Hodge** “Tensile Behavior of Fully Nanotwinned Alloys with Varying Stacking Fault Energies” *MRS Communications*, <https://doi.org/10.1557/mrc.2017.32> (2017).
33. J.S. Riano, **A.M. Hodge** “Exploring the microstructural evolution of Hf-Ti: from nanometallic multilayers to nanostructures” *Scripta Materialia*, **142**, Pages: 55-60 (2018).
34. M.N. Polyakov, T. Chookajorn, M. Mecklenburg, C.A. Schuh, **A.M. Hodge** “Sputtered Hf-Ti nanostructures: A segregation and high-temperature stability study” *Acta Materialia*, Volume: 108 Pages: 8-16 (2016).
35. R. Zhang, R.K. Gupta, C.H.J. Davies, **A.M. Hodge**, M. Torte, K. Xia and N.Birbilis, “The influence of grain size and grain orientation on sensitisation in AA5083” *Corrosion*, Volume: 72 Issue: 2 Pages: 160-168 (2016).
36. J. Yan, N. M. Heckman, L. Velasco, **A. M. Hodge** "Improve sensitization and corrosion resistance of an Al-Mg alloy by optimization of grain boundaries" *Scientific Reports*, **6**:26870 (2016), DOI: 10.1038/srep26870 (2016).
37. N. Heckman, L. Velasco, **A.M. Hodge** “ Influence of twin thickness and grain size on the tensile behavior of fully nanotwinned CuAl alloys” *Advanced Engineering Materials*, Volume: 18 Issue: 6 Pages: 918-922 (2016).
38. G.R. Khanolkar, M.B. Rauls, J.P. Kelly, O.A. Graeve, **A.M. Hodge**, V. Eliasson “Shock Wave Response of Iron-based *In-Situ* Metallic Glass Matrix Composites” *Scientific Reports*, **6**, Article number: 22568 (2016).
39. L. Velasco, **A.M. Hodge** “The mobility of growth twins synthesized by sputtering: tailoring the twin thickness” *Acta Materialia*, Volume 109, 1 May 2016, Pages 142–150. DOI: 10.1016/j.actamat.2016.02.042
40. T. Juarez, **A.M. Hodge**, “Synthesis of nanoporous gold tubes”, *Advanced Engineering Materials* Volume: 18 Issue: 1 Pages: 65-69 (2016).
41. J.P. Kelly, S.M. Fuller, K. Seo, E. Novitskaya, V.E. Eliasson, **A.M. Hodge**, O.A. Graeve, “Designing *In Situ* and *Ex Situ* bulk metallic glass matrix composites via spark plasma sintering in the super cooled liquid state”, *Materials and Design* **93**, pp 26–38 (2016).
42. Kobler, A, **Hodge, A.M.**, Hahn, H., Kuebel, C. “Orientation dependent fracture behavior of nanotwinned copper”, *Applied Physics Letters* **106**, 261902 (2015).

43. G.R. Khanolkar, **A.M. Hodge**, K.M. Flores & V.E. Eliasson, Effect of loading rate on dynamic fracture morphology of a Zr based bulk metallic glass, *Material Transactions*, 56 (6) (2015).
44. I.C. Cheng, E. Garcia-Sanchez, **A.M. Hodge** “Note: A method for minimizing oxide formation during elevated temperature nanoindentation” *Review of Scientific Instruments*, 85, 096106 (2014); DOI: 10.1063/1.4895006
45. Y.F. Zhao, M.N. Polyakov, M. Mecklenburg, M.E. Kassner, **A.M. Hodge** “The role of grain boundary plane orientation in β phase precipitation in Al 5456” *Scripta Materialia*, 89, pp. 49–52 (2014).
46. M. N. Polyakov, J. Lohmiller, P. A. Gruber, **A.M. Hodge** “Load sharing phenomena in nanoscale Cu/Nb multilayers” *Advanced Engineering Materials* 15, No. 9999 (2014). DOI: 10.1002/adem.201400368
47. L. Velasco, M.N. Polyakov, **A.M. Hodge** “Influence of stacking fault energy on twin spacing of Cu and Cu-Al alloys” *Scripta Materialia*, 83, pp. 33-36 (2014).
48. T.A. Furnish, **A.M. Hodge** “On the mechanical performance and deformation of nanotwinned Ag” *APL Materials* 2, 046112 (2014); doi: 10.1063/1.487321
49. O. Franke , J. Alcalá, R. Dalmau, ZC Duan, J. Biener, M. Biener, **A.M. Hodge** “Incipient plasticity of single crystal tantalum as a function of temperature and orientation” *Phil. Mag Philosophical Magazine* 95 (16-18), 1866-1877.
50. Y.F. Zhao, I.C. Cheng, M.E. Kassner, **A.M. Hodge** “The effect of nanotwins on the corrosion behavior of copper”, *Acta Materialia*, 67, pp. 181–188 (2014).
51. I.C. Cheng, **A.M. Hodge** “High temperature morphology and stability of nanoporous Ag foams” *Journal of Porous Materials*, 21:pp. 467–474 (2014).
52. M. N. Polyakov, E. Courtois-Manara, D. Wang, K. Chakravadhanula, C. Kübel, **A.M. Hodge** “Microstructural variations in Cu/Nb and Al/Nb nano metallic multilayers” *Applied Physics Letters*, 102, 241911 (2013).
53. T.A. Furnish, J. Lohmiller, P.A. Gruber, T.W. Barbee, **A.M. Hodge** “Temperature-dependent strain localization and texture evolution of highly nanotwinned Cu” *Applied Physics Letters* 103, 011904 (2013).
54. I.C. Cheng, **A.M. Hodge** “Strength scale behavior of nanoporous Ag, Pd, Cu foams” *Scripta Materialia*, 69, pp. 295-298 (2013).
55. Y.F. Zhao, T.A. Furnish, M.E. Kassner, **A.M. Hodge** “Thermal stability of highly nanotwinned copper: the role of grain boundaries and texture” *Journal of Materials Research*. 27, pp. 3049-3057 (2012).

56. V.T. Nayar, J.D. Weiland, **A.M. Hodge** “Size and scale effects on the viscoelastic characterization of soft biological materials” in press, *Tissue Engineering C* (2012).
57. J. Alcalá, R. Dalmau, O. Franke, M. Biener, J. Biener, **A.M. Hodge** “Planar defect nucleation and annihilation mechanisms in nanocontact plasticity of metal surfaces” *Physical Review Letters* 109, 075502 (2012).
58. **A.M. Hodge**, T.A. Furnish, C.J. Shute et al “Twin stability in highly nanotwinned Cu under compression, torsion and tension” *Scripta Materialia*, 66 (11), pp. 872–877 (2012).
59. I.C. Cheng, **A.M. Hodge** “Morphology, oxidation and mechanical behavior of nanoporous Cu foams” *Advanced Engineering Materials* , 14(4) pp. 219-226 (2012).
60. A.A. Navid, **A.M. Hodge** "Alpha and beta tantalum phase formation – relationship between plasma parameters and microstructure" *Materials Science and Engineering A*. 536, pp. 49–56 (2012).
61. V.T. Nayar, J.D. Weiland, C.D. Nelson, **A.M. Hodge** “Elastic and Viscoelastic behavior of Agar” *Journal of the Mechanical Behavior of Biomedical Materials*, 7, pp. 60–68 (2012).
62. **A.M. Hodge**, T.A. Furnish, A.A. Navid, T.W. Barbee “Shear band formation and ductility in nanotwinned Cu” *Scripta Materialia*, 65, pp. 1006-1009 (2011).
63. C.J. Shute, B.D. Myers, Y. Liao; S. Li, **A.M. Hodge**, T.W. Barbee, Y.T. Zhu, J.R. Weertman “High pressure torsion of copper samples containing columns of highly aligned nanotwins ” *Scripta Materialia*, 65 (10), pp. 899-902 (2011).
64. C.J. Shute, B. Myers, S. Xie, **A.M. Hodge et al.** “Fatigue and damage of copper samples containing aligned nanotwins” *Acta Materialia* 59, pp. 4569–4577 (2011).
65. O. Franke, M. Göken, M. Meyers, K. Durst, **A.M. Hodge** “Dynamic nanoindentation of articular cartilage”, *Materials Science and Engineering C*. 31, pp. 789-795 (2011).
66. V.T. Nayar, J.D. Weiland, **A.M. Hodge** “Nanoindentation of Porcine Sclera” *Materials Science and Engineering C*. 31, pp. 796-800 (2011).
67. A.A. Navid, **A.M. Hodge**, “Controllable residual stresses in sputtered nanostructured alpha-Ta” *Scripta Materialia*, 63 (8), pp. 867-870 (2010).
68. A.A. Navid, E. Chason, **A.M. Hodge**, “Evaluation of thermal and intrinsic stress in copper and tantalum sputtered films” *Surface and Coatings Technology* 205, pp. 2355–2361(2010).
69. K. Rajulapati, M. Biener, J. Biener, **A.M. Hodge**, “Temperature dependence of the plastic flow behavior of tantalum” *Philosophical Magazine Letters*, 90, pp. 35–42 (2010).

70. C.J.Shute, B. Myers, S. Xie, **A.M. Hodge**. “Detwinning and crack initiation during cyclic loading in multilayercopper/copper samples with nanoscale twinning, “30th Riso International Symposium on Materials Science – Nanostructured Metals: Fundamentals to Applications, pp. 171-182 (2009).
71. Z. C. Duan, **A. M. Hodge**, “High temperature nanoindentation: new developments and ongoing challenges” *JOM*, 61, pp. 32-36 (2009).
72. P.L. Martin, **A.M. Hodge**, G.H. Campbell, “Compaction behavior and mechanical properties of uniaxially pressed Bi-W composites” *Metallurgical and Materials Transactions A*, 40A, pp. 2124-2136 (2009).
73. J. Weissmüller, R.C. Newman, H-J Jin, **A.M. Hodge**, J.W. Kysar. “Nanoporous metals by alloy corrosion: formation and mechanical properties” *MRS Bulletin*, 34, pp. 577-586 (2009).
74. M. E. Kassner P. Geantil, **A.M. Hodge**, R.S. Rosen “The assessment of the ambient-temperature mechanical properties of ultrafine grained silver with nanotwins using microshear tests” *Scripta Materialia*, 61, pp. 9721-9724 (2009).
75. A. Detor, **A.M. Hodge** et al. “Residual stress and microstructure of thick sputtered films” *Acta Materialia*, 57, pp. 2055-2065 (2009).
76. S. Van Petegem, S. Brandstetter, R. Maass, **A.M. Hodge**, B.S. El-Dasher, J. Biener, B. Schmitt, C. Borca, H. Van Swygenhoven. “On the microstructure of nanoporous gold: an x-ray diffraction study” *Nano Letters*, 9, pp.1158-1163 (2009).
77. C.J. Shute, B.D. Myers, S. Xie, T.W. Barbee, **A.M. Hodge**, J.R. Weertman. “Microstructural stability during cyclic loading of multilayer copper/copper samples with nanoscale twinning” *Scripta Materialia*, 60, pp.1073–1077(2009).
78. **A M. Hodge**, R.T. Doucette, M.M. Biener, J. Biener, O. Cervantes, A.V. Hamza “Ag effects on the elastic modulus values of nanoporous Au foams” *Journal of Materials Research*, 24, pp.1600-1606 (2009).
79. B. Ahn, R. Mitra, **A.M. Hodge**, E.J. Lavernia, S.R. Nutt “Strain rate sensitivity studies of cryomilled Al alloy performed by nanoindentation” *Material Science Forum*, Vols. 584-586, pp. 221-226 (2008).
80. **A.M. Hodge**, M. Kumar, P.W. Martin, G. H. Campbell “Effect of Intermetallic layer formation on the mechanical behavior of laminated Ta/Au composites” *Materials Science and Engineering A*, volume 494, pp. 276-280 (2008).
81. O. Franke, M. Göken, **A.M. Hodge** “Nanoindentation of soft tissue: current and developing approaches” *Journal of Metals*, volume 60, pp.49-53 (2008).

82. **A.M. Hodge**, Y.M. Wang, T.W. Barbee Jr “Mechanical deformation of high-purity sputter-deposited nano-twinned copper” *Scripta Materialia*, 59, pp.163-166 (2008).
83. J. Biener, G. W. Nyce, **A. M. Hodge**, M. M. Biener, and A. V. Hamza, S. A. Maier “Nanoporous plasmonic metamaterials” *Advanced Materials*, 20, pp.1211-1217 (2008).
84. M. Biener, J. Biener, **A. M. Hodge**, A. V. Hamza “Dislocation nucleation in bcc Ta (001) studied by nanoindentation” *Phys. Rev. B*, 76, 165422 (2007).
85. L.A. Zepeda-Ruiz, B. Sadigh, J. Biener, A.M. Hodge and A.V. Hamza “Mechanical response of freestanding Au nano-pillars under compression” *Applied Physics Letters*, 91, 101907 (2007).
86. P.W. Martin, **A.M. Hodge**, G.H. Campbell “Compaction behavior of uniaxially cold-pressed Bi-Ta composites” *Scripta Materialia* 57, pp.229-232 (2007).
87. **A.M. Hodge**, J. Biener, J.R. Hayes, P.W. Bythrow, A.V. Hamza. “Scaling equations for nanoporous open-cell foams” *Acta Materialia*, 55, pp.1343-1349 (2007).
88. J. Biener, **A. M. Hodge**, J.R. Hayes, C. A. Volkert, L. A. Zepeda-Ruiz, A. V. Hamza. “Size effects on the mechanical behavior of nanoporous Au”, *Nano Letters*, 6 p. 2379 (2006).
89. J.R. Hayes, **A.M. Hodge**, J. Biener, K. Sieradzki, A.V. Hamza. “Monolithic nanoporous copper by dealloying of Cu/Mn” *Journal of Materials Research*, 21, pp. 2611-2616 (2006).
90. Y.M. Wang, **A.M. Hodge**, P.W. Bythrow, T.W. Barbee, A.V. Hamza. “Negative strain rate sensitivity in ultra-high strength nanocrystalline Ta” *Applied Physics Letters*, 89, 081903 (2006).
91. **A.M. Hodge**, Y.M. Wang, T.W. Barbee Jr. “Large-scale production of nano-twinned, ultrafine-grained copper” *Materials Science and Engineering A*, 429 p. 272 (2006).
92. **A.M. Hodge**, J. R. Hayes, J. A. Caro, J. Biener, A. V. Hamza. “Characterization and mechanical behavior of nanoporous gold” *Advanced Engineering Materials*, 8 pp. 853-857 (2006).
93. Y.M. Wang et. al, “Deforming nanocrystalline Ni at ultrahigh strain rates” *Applied Physics Letters*, 88, 061917 (2006).
94. J. Biener, **A. M. Hodge**, A. V. Hamza. “Microscopic failure behavior of nanoporous gold”, *Applied Physics Letters*, 87, 121908 (2005).
95. **A.M. Hodge**, G.F Gallegos, R.J. Foreman, “Analysis of residual stresses in thick uranium coatings”, *Journal of Nuclear Materials*, 342, pp8-13 (2005).

96. Y.M. Wang, **A.M. Hodge**, J. Biener, A.V. Hamza, D.B. Liu, T.G. Nieh, “Deformation twinning in nanocrystalline Ta” *Applied Physics Letters*, 86, 101915 (2005).
97. **A.M. Hodge**, J. Biener, L.M. Hsiung, Y.M. Wang, A.V Hamza, J. Satcher Jr., “Monolithic nanocrystalline Au fabricated by the compaction of nanoscale foam” *Journal of Materials Research*, 20 pp. 554-557 (2005).
98. J. Biener, **A. M. Hodge**, A. V. Hamza, L.M. Hsiung, and J. H. Satcher Jr. “Nanoporous Au – a high yield strength material” *Journal of Applied Physics*, 97, 024301 (2005).
99. A.C. Lund, **A.M. Hodge**, C.A. Schuh, “Incipient plasticity during nanoindentation at elevated temperatures”, *Applied Physics Letters*, 85 pp. 1362-1364 (2004).
100. **A.M. Hodge**, L.M. Hsiung, T.G. Nieh, “Creep of nearly lamellar TiAl alloys containing W” *Scripta Materialia*, 51 pp. 411-415 (2004).
101. **A.M. Hodge**, T.G. Nieh, “Evaluating abrasive wear of amorphous alloys using nanoscratch technique” *Intermetallics*, 12 pp. 741-748 (2004).
102. **A.M. Hodge**, D.C. Dunand, “Measurements and modeling of creep in open-cell NiAl foams” *Metallurgical and Materials Transactions A*, 34 pp. 2353-2363 (2003).
103. D.C. Dunand, **A.M. Hodge**, C. Schuh, “Pack-aluminization kinetics of nickel rods and foams” *Materials Science and Technology*, 18 pp. 326-332 (2002).
104. **A.M. Hodge**, D.C. Dunand, “Synthesis of nickel-aluminide foams by pack-aluminization of nickel foams”, *Intermetallics*, 9(7) pp. 581-589 (2001).

SELECTED INVITED AND KEYNOTE PRESENTATIONS:

1. Texas A&M, Materials Science Department Seminar “Multifunctional NanoMultilayers” February 27, 2023
2. AVS Pacific Rim Symposium on Surfaces, Coatings and Interfaces (PacSurf 2022) “High-throughput Magnetron Sputtering for Microstructure and Alloy Design” Kona, Hawaii, December 15th, 2022
3. New Jersey Institute of Technology, Department of Chemical Engineering and Materials Science Seminar, “Designing Microstructures via Nano Multilayers” April 4th, 2022.
4. University of Michigan, Materials Science Department Seminar, “Designing Microstructures via Nano Multilayers” January 21st, 2022.

5. UC Riverside, Department of Mechanical Engineering Seminar, “Expanding the Fabrication Space of 3D Nano- and Micro-Architected Lattice Materials” January 5th, 2022.
6. Virtual Seminar - Department of Materials Science & Engineering, North Carolina State University “Designing Microstructures via Nano Multilayers” October 8, 2021.
7. 2021 TMS Virtual Conference “Heterogenous Nanostructured Nickel Superalloy”
8. 2021 TMS Virtual Conference “Microstructural Changes in Nanotwinned Metals under Various Deformation Modes”
9. Virtual Materials Science Seminar Series Oxford University “Metallic and ceramic nano multilayers” April 2021.
10. Virtual Materials Science Seminar Series UCLA/UCSD/UCI “Making Films in LA starring nano- and micro-structures” November 2020
11. The Center for Integrated Nanotechnologies (CINT) Annual Meeting (virtual) “Synthesis and microstructural evolution of sputtered nanostructured alloys” September 2020
12. UC Irvine, Materials Science Department “Synthesis and Characterization of Metal and Ceramic Nano Multilayers” Irvine, CA, March 2020
13. 2020 TMS Annual Meeting and Exhibition "synthesis of Tailored Microstructures", San Diego, CA. February 26, 2020.
14. MIT Alloy Design Workshop 2019 “Magnetron sputtering for alloy design: challenges and opportunities” Cambridge, MA, December 2019
15. MRS Fall Meeting, Symposium MS “Thermal Processes and Mechanisms in Refractory Nanomultilayers ” Boston, MA, December 2019.
16. Hamburg Collaborative Research Center SFB 986 Workshop “Tailored Metal Microlattices: Challenges and Outlook” Hamburg, Germany, June 2019
17. 46th International Conference on Metallurgical Coatings and Thin Films (ICMCTF), "*Mechanical deformation in metal and ceramic Nano Multilayers: Case Studies* " San Diego, CA. April, 2019.
18. MRS Spring Meeting, Symposium M “Thermal Processes and Mechanisms in Sputtered Nanostructures” Phoenix, AZ, April 2019.
19. TMS 2019 Annual Meeting & Exhibition “Diversity in STEM: Retention, Graduation and Beyond” San Antonio, TX, March 2019

20. Stanford University, Mechanical Engineering Department, “ Processes and Mechanisms for Thermal Stability in Nanostructures” December 6, 2018.
21. **Gordon Conference, Thin Film & Small Scale Mechanical Behavior, Bates College, “Mechanical Testing and Microstructure of Nanotwinned Alloys” July 18, 2018.**
22. MRS Spring Meeting, Symposium MN “Nanomaterials by design: from nanometallic multilayers to nanostructures” Phoenix, AZ, April 2018.
23. TMS 2018 Annual Meeting & Exhibition “Mechanical Behavior of Nanotwinned Alloys” Phoenix, AZ, March 2018.
24. Schöntal Symposium on Dislocation based Plasticity “Growth Twins at the Nanoscale” Schöntal, Germany, February 2018.
25. Controversies Colloquium 2018: Stability of Nanostructures “Exploring the thermal evolution of nanomaterials: From nanometallic multilayers to nanostructures UC Irvine, Irvine, CA February 2018.
26. Saarbrücken University, Leibniz Institute for New Materials (INM) Seminar, Germany “ Grain Boundary Engineering at the Nanoscale" June 2017.
27. Northwestern University, Materials Science Department Seminar “Grain Boundary Engineering at the Nanoscale" March 2017.
28. MRS Fall Meeting Meeting, Symposium MB4 "Growth nanotwins in low, medium and high stacking fault energy alloys" Boston, MA, December 2016.
29. MRS Fall Meeting Meeting, Symposium MB5" the Effect of Twins and Grain Size on the Mechanical Behavior of Highly Nanotwinned Alloys” Boston, MA, December 2016
30. ASM Orange Coast Chapter Seminar Series, Irvine, CA " Grain Boundary Engineering at the Nanoscale". November 2016.
31. **Gordon Conference, Structural Nanomaterials, The Chinese University of Hong Kong, Hong Kong, “ Synthesis of Thermally Stable Nanostructures” July 2016.**
32. University of Erlangen, Int. Symposium to celebrate the 50th anniversary of Materials Science in Erlangen “The search for grain-boundary engineered nanostructures”. Germany, Oct 29, 2015
33. IMRC Conference “Corrosion in nanoscale grain boundary engineered materials”, [Cancún](#), Mexico, Aug 2015
34. Stanford University, Materials Science Department Seminar, “Grain boundary engineering at the nanoscale”April 24, 2015.

35. SHPE National Conference, **Distinguished Lecture**, “Can “nano” save the world or will it just make it smaller?” Detroit, Nov. 6, 2014.
36. Hamburg University of Technology, Germany, Materials Science Seminar, “Grain boundary engineered highly nanotwinned structures” September 10, 2014.
37. Georgia Tech, Materials Science Department Seminar, “Grain boundary engineering at the nanoscale” Feb. 24, 2014.
38. UCLA, Physical Chemistry Department Seminar, “Synthesis, characterization, and mechanical properties of nanoporous foams” Jan. 27, 2014.
39. Purdue University, Materials Science Department Seminar, “Grain boundary engineered highly nanotwinned structures” Oct. 18, 2013.
40. Nanomechanical Testing in Materials Research & Development Conference, “Mechanical and thermal stability of nanotwinned alloys” Olhao, Portugal, Oct. 10, 2013.
41. TMS 2013 Annual Meeting & Exhibition. “Deformation in several nanotwinned metals” San Antonio, TX. March 4, 2013.
42. MRS Fall Meeting Meeting, Symposium GG “ Processing of highly nanotwinned FCC materials”, Boston, MA, Nov. 26, 2012.
43. MRS Fall Meeting Meeting, Symposium TT “ Incipient plasticity of single Crystal Tantalum as a function of temperature and orientation”, Boston, MA, Nov. 27, 2012.
44. Cornell University, Materials Science Department Seminar, “Grain boundary engineered nanostructures” Oct. 11, 2012.
45. International Workshop on Interfaces, “Crystallographic metallic material states at the nanoscale” The Bear Creek Mountain Resort in Macungie, PA, USA, Oct. 2-5, 2012.
46. European Solid Mechanics conference, “Twin stability of nanotwinned Cu under various loading conditions” Graz, Austria, July 2012.
47. Boise State University, Materials Science Department Seminar, “The search for stable nanostructured materials” April 2012.
48. UC Irvine, Materials Science Department Seminar, “Deformation behavior in highly nano-twinned Cu” Nov. 4, 2011.
49. Society of Hispanic Professional Engineers (SHPE) National Conference, “How to become a better researcher: from graduate school to the workforce” Anaheim, CA Oct. 26, 2011.

50. Nanomechanical Testing in Materials Research & Development Conference, “Ductility in highly nanotwinned copper – myth or reality?” Lanzarote, Spain Oct.10, 2011.
51. Materials Today Webinar, “High temperature nanoindentation: RT to 200°C” Web seminar, July 27th, 2011. (This presentation was viewed by over 700 world-wide users).
52. Karlsruhe Institute of Technology (KIT), “Highly nano-twinned Cu: synthesis and mechanical behavior” Germany, July 20th, 2011.
53. National Institute for Materials Science (NIMS), “Synthesis and mechanical behavior of nano-twinned materials” Tsukuba, Japan, March 9 2011.
54. **Gordon Conference, Thin Film & Small Scale Mechanical Behavior, Colby College, “Mechanics of thin films and multilayers at the nanoscale” Aug. 2010.**
55. MRS Mexico Meeting, Cancun, Mexico “Mechanics of metallic nanoscale multilayers” August 2010.
56. MIT, Cambridge, MA, Department of Materials Science and Engineering Seminar, “Nanoporous metal foams: synthesis and mechanical behavior” April 1, 2010.
57. Caltech, Los Angeles, Japan Society of Mechanical Engineers (JSME) Young Researchers Conference, “Nano-twinned metals: synthesis, characterization and mechanical behavior” Pasadena, March 2010.
58. UCLA, Materials Science Department Seminar, “Synthesis and yield behavior nano-twinned copper” April 2010.
59. TMS Spring Meeting, Seattle WA, “Elastic modulus study of nanoporous Au foams” Feb. 2010.
60. **Plenary**, Nanomechanical Testing in Materials Research & Development Conference, (this is the equivalent of a European Gordon Conference). “Nanoscale mechanical behavior of BCC materials : case study Ta” Barga (Tuscany), Italy, September 2009.
61. Thermec Conference, “Plasma characteristics and stress evolution of magnetron sputtered thin films” Berlin Germany, Aug. 2009.
62. Cal State, Los Angeles, Chemistry Department Seminar, “Nanoporous metal foams: processing, characterization and mechanical behavior” April 2009.
63. UC San Diego, “Processing and yield behavior nano-twinned copper foils” Department of Mechanical Engineering Colloquium, March 2009.

64. ASME Annual Meeting, “Effect of cyclic deformation on highly nanotwinned copper” Boston, MA, Nov. 2008
65. UC Riverside, Department of Mechanical Engineering Colloquium, “Scaling effects and applications of high porosity nanoporous metal foams” Riverside, CA, Oct 2008.
66. UCLA/ Hysitron Nanomechanical Testing Workshop:Frontiers of Materials Characterization, “Dynamic nanoindentation techniques for soft biological materials” Los Angeles, June 2008.
67. **Keynote Speaker** Hysitron User’s meeting at TMS Spring meeting 2008, “ Dynamic nanoindentation techniques for metallic nanoporous materials and soft biomaterials” New Orleans, LA March 2008.
68. Arizona State University, School of Materials Seminar, Tempe, AZ, Fall 2006.
69. UC Berkeley, Materials Science and Engineering Department Seminar, Berkeley, CA, Fall 2006.
70. UC Berkeley, Mechanical Engineering Department Seminar, Berkeley, CA, Spring 2006.
71. **Keynote Speaker** College of Engineering Honors Convocation, University of Nevada, Las Vegas, April 25, 2005.
72. University of Nevada, Las Vegas, Mechanical Engineering Department Seminar, “Mechanical properties of open-cell foams and amorphous alloys” Las Vegas, NV 2003.
73. TMS Spring Meeting, “Wear of amorphous alloys” San Diego, CA, March 2003.

SELECTED CONTRIBUTED PRESENTATIONS:

1. Daniel Goodelman and Andrea M. Hodge. "Crystallographic Transitions in Compositionally Complex Alloy (CCA) Thin Films" 2021 ASM LA Chapter Annual Student Night, Virtual, May 25, 2021
2. J. Sebastian Riano and Andrea M. Hodge. "*Exploring the thermal evolution of nanomaterials: from nanometallic multilayers to nanostructures*" 2018 TMS Annual Meeting & Exhibition, Phoenix, Az. March 15, 2018.
3. J. Sebastian Riano and Andrea M. Hodge. "*Thermal Evolution of Nanometallic Multilayers*" 45 International Conference on Metallurgical Coatings and Thin Films (ICMCTF), San Diego, CA. April 23, 2018.
4. J. Bahena and A.M. Hodge “*Grain Boundary Engineering of Corrosion Resistant Aluminum*” 2018 TMS Annual Meeting & Exhibition, Phoenix, AZ, March 13, 2018

5. J. Bahena, J. Yan, and A.M. Hodge “*Sensitization and Corrosion Properties of Sputtered Al-Mg Alloys*” 2018 USC Industry Day, Los Angeles, CA, April 20, 2018
6. N. Heckman and A.M. Hodge "*Effect of microstructure and composition on the mechanical behavior of nanotwinned CuAl*" 2015 TMS Annual Meeting & Exhibition, Orlando, FL. March 17, 2015.
7. J. Sebastian Riano and Andrea M. Hodge. "*Exploring the microstructural evolution of nanometallic multilayers*" Department of Aerospace and Mechanical Engineering poster competition, University of Southern California. Los Angeles, Ca, November 24, 2017.
8. I. C. Cheng and A. M. Hodge “*A method for minimizing oxide formation during elevated temperature nanoindentation*” 2015 TMS Annual Meeting & Exhibition, Orlando, FL. March 18, 2015.
9. I. C. Cheng, J. Kelly, O. Graeve and A. M. Hodge “*Mechanical behavior of an Fe-based structural amorphous metal with W nanoparticle additions*” 2015 TMS Annual Meeting & Exhibition, Orlando, FL. March 16, 2015.
10. L. Velasco and A.M. Hodge "*Tailoring the twin thickness in the formation of highly nanotwinned Cu-alloys*" 2015 TMS Annual Meeting & Exhibition, Orlando, FL. March 18, 2015.
11. L. Velasco and A.M. Hodge "*Twinning in Al and Al-alloys*" 2015 TMS Annual Meeting & Exhibition, Orlando, FL. March 18, 2015.
12. L. Velasco and A.M. Hodge "*Synthesis of nanotwins in low and high stacking fault energy materials*" 2015 ICMCTF International conference on metallurgical coatings and thin films”. San Diego, CA. April 20, 2015.
13. T. Juarez and A.M. Hodge "*Synthesis and characterization of metallic tubular nanoporous structures*" 2015 TMS Annual Meeting & Exhibition, Orlando, FL. March 17, 2015.
14. M.N. Polyakov, J. Lohmiller, P.A. Gruber, and A.M. Hodge "*Lattice strain distributions in nanoscale multilayers with decreasing layer thickness*" 2014 MRS Fall Meeting & Exhibition, Boston, MA. December 4, 2014.
15. L. Velasco and A.M. Hodge "*The Influence of stacking fault energy on the formation of highly nanotwinned Cu-Al Alloys*" 2014 TMS Annual Meeting & Exhibition, San Diego, CA. February 18, 2014.
16. T. Juarez and A.M. Hodge “*Synthesis and characterization of nanoporous gold tubes.*” First International Symposium on Nanoporous Materials by Alloy Corrosion. Lake Bostal, Germany. September 29-30, 2014.

17. I.C. Cheng, J.P. Kelly, V. Eliasson, O.A. Graeve, and A.M. Hodge "*Mechanical behavior of an Fe-based structural amorphous metal with W nanoparticle additions*" MRS 2014 Fall Meeting & Exhibition, Boston, MA, December 1, 2014.
18. I.C. Cheng and A.M. Hodge "*The effect of morphology and ligament size in nanoporous silver foams*" MRS 2014 Fall Meeting & Exhibition, Boston, MA, December 3, 2014.
19. M. N. Polyakov, J. Lohmiller, P. A. Gruber, A. M. Hodge "*Lattice strain distributions in nanoscale multilayers with decreasing layer thickness,*" MRS Fall Meeting & Exhibition,, November 30-December 5, 2014, Boston, MA.
20. M. N. Polyakov, J. Lohmiller, P. A. Gruber, A. M. Hodge "*Stress distributions in nanoscale multilayers as a function of layer thickness,*" TMS, February 16-20, 2014, San Diego, CA.
21. N.M. Heckman, T.A. Furnish and A.M. Hodge "*Mechanical behavior of nanotwinned binary copper-based alloys.*" Gordon Research Conference: Structural Nanomaterials 2014. Hong Kong, China. July 22, 2014.
22. T.A. Furnish and A.M. Hodge "*Comparative study of the mechanical behavior of various nanotwinned metals.*" MRS 2013 Fall Meeting & Exhibition, Boston, MA. December 3, 2013.
23. T.A. Furnish and A.M. Hodge "*Mechanical performance of nanotwinned Ag and CuAl foils.*" MS&T 2013. Montreal, Quebec, Canada. October 29, 2013.
24. T.A. Furnish and A.M. Hodge "*Deformation and microstructural changes of highly nanotwinned Cu under tension.*" International Center for Materials Research Summer School, University of California Santa Barbara. Santa Barbara, CA. August 19, 2013.
25. Y. Zhao, T.A. Furnish, M.E. Kassner, A.M. Hodge "*Thermal stability of copper foils with and without nanotwins.*" TMS 2013 Annual Meeting & Exhibition. San Antonio, TX. March 5, 2013.
26. Y. Zhao, M.E. Kassner, A.M. Hodge "*The effect of nanotwins on the corrosion behavior of Cu foils in 3.5% NaCl solution.*" 2013 MRS Fall Meeting and Exhibit. Boston, MA. December 4, 2013.
27. M. N. Polyakov, E. Courtois-Manara, D. Wang, K. Chakravadhanula, C. Kübel, and A. M. Hodge "*Microstructural modifications in Al/Nb and Cu/Nb nanocomposites.*" TMS 2013 Annual Meeting and Exhibition. San Antonio, TX. March 6, 2013.
28. M. N. Polyakov, E. Courtois-Manara, D. Wang, K. Chakravadhanula, C. Kübel, and A. M. Hodge "*Microstructural variations in Cu/Nb and Al/Nb nano metallic multilayers.*" TMS Nanoscale Multilayers '13. Getafe, Spain. October 4, 2013.

29. L. Velasco, M. Polyakov, and A.M. Hodge “*The influence of stacking fault energy on the formation of highly nanotwinned Cu-Al Alloys.*” TMS, Nanoscale Multilayers’13, An International Workshop on the Mechanical Behavior of Nanoscale Multilayers, Madrid, Spain. October 4, 2013.
30. I.C. Chung and A.M. Hodge “*Synthesis, characterization, and mechanical behavior of nanoporous metal foams.*” 2013 MRS Fall Meeting & Exhibition. Boston, MA. December 2, 2013.
31. A.M. Hodge “*The mechanical deformation of highly nanotwinned Cu*”, TMS 2012 Annual Meeting & Exhibition. Orlando, Fl. March 13, 2012.
32. I.C. Chung and A.M. Hodge “*Synthesis and morphology of nanoporous Cu and Cu oxide foams*”, TMS 2012 Annual Meeting & Exhibition. Orlando, Fl. March 14, 2012.
33. T.A. Furnish and A.M. Hodge “*Microstructural changes across shear bands in nanotwinned Cu foils deformed at room temperature and 77K*”, TMS 2011 Annual Meeting & Exhibition. Orlando, Fl. March 12, 2012.
34. A.M. Hodge “*Nanoscale behavior of Ta single crystals – orientation and temperature dependence*”, TMS 2011 Annual Meeting & Exhibition. San Diego, CA. February 28, 2011.
35. I.C. Cheng and A.M. Hodge “*The behavior of nanoporous Au and Cu Foams with controllable pore size.*” TMS 2011 Annual Meeting & Exhibition. San Diego, CA. February 28, 2011.
36. I.C. Cheng and A.M. Hodge “*Synthesis, morphology, and oxidation of nanoporous Cu foams*” IMRC, Cancún, Mexico, Aug 2011.
37. T.A. Furnish, A.A. Navid, T.W. Barbee Jr., A.M. Hodge “*Synthesis and deformation of nano-twinned copper foils*”. USC AME PhD Poster Competition. (Awarded Best Poster). Los Angeles, CA. Sept 9, 2011.
38. T.A. Furnish, A.A. Navid, T.W. Barbee Jr., A.M. Hodge “*Synthesis and deformation of nano-twinned copper foils*”. TMS 2011 Annual Meeting & Exhibition, MPMD Technical Division Student Poster Contest Symposium. San Diego, CA. February 28, 2011.
39. V.T. Nayar, J.D. Weiland, A.M. Hodge “*Viscoelastic characterization of soft biological materials using nanoindentation*” IMRC, Cancún, Mexico, Aug 2011.

40. C.S. Nelson, V.T. Nayar, J.D. Weiland, A.M. Hodge “*Characterization of ultrasoft biological materials via quasi-static nanoindentation*”, IMRC, Cancún, Mexico, Aug. 2011.
41. V.T. Nayar, J.D. Weiland, C.S. Nelson, A.M. Hodge “*Elastic and viscoelastic characterization of agar*”, TMS, San Diego, CA, Feb 2011.
42. Poster – A.A. Navid, T.A. Furnish, I. Golosker “*Plasma and Stress characteristics for magnetron sputtered Cu films*”. NSF CMMI Engineering Research and Innovation Conference. Honolulu, Hawaii, June 22, 2009.
43. A. A. Navid, A.M. Hodge “*Study of phase formation on nanostructured tantalum*,” TMS, Seattle, WA, February 14-18, 2010.
44. A. A. Navid, E. Chason, A.M. Hodge “*Evaluation of thermal and growth stress in copper and tantalum sputtered films*,” TMS, Seattle, WA, February 14-18, 2010.
45. A. A. Navid, Andrew Detor, Eric Chason and Andrea Hodge “*In situ multi-beam optical stress sensor (MOSS) measurement for low stress deposition*,” Poster Session, MRS, San Francisco, CA, April 2010.
46. V.T. Nayar, J.D. Weiland, A.M. Hodge “*Viscoelastic characterization of soft biological materials using nanoindentation*”, IMRC, Cancún, Mexico, Aug 2011.
47. C.S. Nelson, V.T. Nayar, J.D. Weiland, A.M. Hodge “*Characterization of ultrasoft biological materials via quasi-static nanoindentation*, IMRC, Cancún, Mexico, Aug 2011.
48. V.T. Nayar, J.D. Weiland, A.M. Hodge. “*Nanoindentation of Porcine Sclera*”, Neural Interfaces Conference, Long Beach, CA, June 2010.
49. V.T. Nayar, J.D. Weiland, A.M. Hodge. “*Nanoindentation of Porcine Sclera*”, TMS, Seattle, WA, Feb 2010.
50. A. M. Hodge, Y.M. Yang, T.W. Barbee “*Processing and Mechanical Deformation of High Purity Sputter Deposited Nano-Twinned Copper* “ AVS conference, Dublin Ireland, July 2008.
51. A.M. Hodge “*Nanoscale deformation in tantalum single crystals*” MRS Spring Meeting, March 2008, San Francisco, CA.
52. A.M. Hodge, T.W. Barbee “*UFG materials synthesized by multilayer technology*” TMS Spring Meeting, March 2006, San Antonio, TX
53. A.M Hodge, J. Biener “*From nanoscale Au columns to nanoporous Au: simulations and experiments*” MRS Fall Meeting, November 2006, Boston, MA.

54. A.M. Hodge “*Role of interfacial phases on the mechanical behavior of Ta-Au multilayers*” MRS Fall Meeting, November 2006, Boston, MA.
55. A.M. Hodge “*Processing and stress analysis of thick Uranium films*” MRS Fall Meeting, November 2006, Boston, MA.
56. A.M Hodge, J. Biener “*An overview on the characterization and mechanical behavior of nanoporous Gold*” MetFoam 2005, Kyoto, Japan, 2005.
57. A.M. Hodge, T.W. Barbee “*Characterization and mechanical behavior or Cu/Cu nano-laminates*” MRS Spring Meeting, San Francisco, CA, March 2005.
58. A.M Hodge “*Characterization and mechanical behavior of nanoporous nanocrystalline gold*” Chemistry and Materials Science Directorate Post-Doctoral Symposium, Livermore, CA 2004.
59. A.M Hodge, T.G. Nieh “*Creep of nearly lamellar TiAl alloys containing 1.0 and 2.0 at.% W*” TMS fall Meeting, New Orleans, LA, September 2004.
60. A.M. Hodge, A.C. Lund, C.A. Schuh “*Nanoindentation of Pt at elevated temperatures*” TMS Fall Meeting, New Orleans, LA, September 2004.
61. A.M Hodge, J. Biener “*Scaling laws for open-cell nanoporous nanocrystalline gold*” MRS Fall Meeting, Boston, MA, December 2004.
62. A.M Hodge, D.C. Dunand “*Aluminization of NiAl and Ni₃Al foams*” MRS poster session, First prize, Winter Quarter 2001.
63. A.M Hodge, D.C. Dunand “*Processing of NiAl foams by pack aluminization*”, TMS Fall meeting, Indianapolis, IN 2001.
64. A.M Hodge, D.C. Dunand “*Processing of intermetallic foams by aluminization*”, Society of Hispanic Professional Engineers 23rd Annual Technical Career Conference (NTTC), Fresno, CA. Third Prize, 2001.

COURSES TAUGHT:

1. Instructor, ENGR 102, Engineering Freshman Academy. University of Southern California. Course required for all engineering freshman that covers introductory material relevant to the engineering profession including ethics, societal impact, and innovations. Students engage in a team project that spans the entire semester (Fall 2008-2009, 2011).
2. Instructor, AME/MASC 551, Mechanical Behavior of Engineering Materials. University of Southern California. Course covers mechanical properties of materials; macroscopic mechanical behavior related to structure and microstructure of materials; elementary

dislocation theory related to basic strengthening mechanisms; fatigue and fracture; nanomaterials (Fall 2009-2011).

3. Instructor, AME 231L, Mechanical Behavior of Materials. Material properties of metals, ceramics, and composites; stress-strain relationships; microstructural characteristics; fracture, fatigue, and creep; effects of processing. (Spring 2013-2015, Spring 2018).
4. Instructor, AME 204, Strength of Materials. Stress, strain and deflection of mechanical elements due to tension, shear, bending, or torsion; combined loads; energy methods, statically indeterminate structures; strength-based design. (Spring 2008-2009).

STUDENTS & RESEARCH ASSOCIATES:

Postdoctoral Research Associates:

1. Dr. Zhi Chao Duan – (August 2009-August 2010) – Now a Patent Attorney at Liu, Shen & Associates, Beijing, China.
2. Dr. Koteswararao Rajulapati (Dec 2007 – Dec 2008) – Now a Professor at Department of Materials Science, University of Hyderabad, India.
3. Dr. I-Chung Cheng, (May 2014 – Dec 2015) – Now an Assistant Professor at Department of Materials Science, National Taiwan University.
4. Dr. Jianfeng Yan, (January 2015 – June 2016) - Now an Associate Professor at Department of Mechanical Engineering, Tsinghua University, Beijing.
5. Dr. Angelica Saenz (Feb 2017 – Sept 2019) - Now a researcher at Nanoclear technologies, Pasadena, CA.

PhD Students:

Thesis advisor

2007-2011 Anahita Afshin Navid; AME department -A Comparative Study of Plasma Conditions, Microstructure and Residual Stress in Sputtered Thin Films. (Ph.D. awarded May 2011) Now at Philips Lumileds, San Jose CA.

2008-2012 V. Tim Nayar; BME Department, Viscoelastic Characterization of Soft Biological Materials (Ph.D. awarded May 2012). Now at Medtronics.
Co-Advised with Prof. James Weiland (BME)

2009-2013 I-Chung Cheng - MFD Department – Exploring the Behavior of Nanoporous Foams with Controllable Density and Pore Size. (Ph.D. awarded May 2013) Now Associate Professor at National Taiwan University

- 2009-2014** Timothy Furnish – AME Department, Synthesis and Deformation Behavior of Highly Nanotwinned Metals. (Ph.D. awarded May 2014) Now staff scientist at Sandia National Labs.
- 2009 - 2014** Yifu Zhao; AME Department - The Behavior of Nanotwinned Materials under corrosive and elevated temperature environments. (Ph.D. awarded May 2014). **Co-Advised with Prof. Michael Kassner (AME)**
- 2010-2015** Mikhail Polyakov - AME Department - Tailored crystallographic material states for the design of coherent and incoherent interfaces. (Ph.D. awarded August 2015) Now Senior Product Design Engineer, Coatings, Edgewell Personal Care, CT.
- 2011-2016** Leonardo Velasco-MFD Department – Synthesis of Highly Nanotwinned Ultra High Strength Aluminum Alloys. Now Professor at Universidad Nacional, Colombia.
- 2012- 2017** Nathan Heckman- AME Department - Mechanical Behavior Highly Nanotwinned Metal Alloys. Now staff scientist at Sandia National Laboratory.
- 2012 -2017** Theresa Juarez- AME Department - Synthesis of Optimized Hierarchical Metallic Structures. Now staff-scientist at JPL, California
- 2014 -2019** Sebastian Riaño- MFD Department - Synthesis and mechanical properties of thermally stable metallic multilayers. Now staff scientist at Verily, California
- 2015 – 2020** Chelsea Appleget – AME Department – Optical Multilayers with Optimize Transparency and Wear. Now staff scientist at Aerospace Corporation
- 2015 - 2020** Joel Bahena – AME department – Corrosion resistant Aluminum alloys. Now staff scientist at Intel
- 2016 - 2021** Alina Garcia – MFD Department - Coatings in Hierarchical Structures
Now staff scientist at Northrop Grumman
- 2018 - 2023** Daniel Goodelman – AME Department - Design and Characterization of Compositionally Complex Alloys – Now post-doctoral fellow at Lawrence Livermore National Laboratory
- 2017 – 2024** Karina Hemmendinger – AME Department - Corrosion in Complex Alloys
Defended on January 24, 2024
- 2019- present Adie Alwen – MFD Department - Composite Metamaterials
Expected graduation date May 2024
- 2020- present Danielle White – MFD Department – Optical Materials

Expected graduation date May 2025

2020- present Kyle Rusell – AME Department – Irradiated Grain Boundaries
Expected graduation date May 2025

2022- present Andre Bohn – MFD Department – Optimization of refractory-HEAs
Expected graduation date May 2027

2022- present Ikponmwosa Iyinbor - MFD Department– High -throughput mechanical
Characterization - Expected graduation date May 2027

2023 – present Ashley Maldonado - MFD department - Alloy design for space applications
Expected graduation date May 2028

Ph.D. Committee Member (partial list)

2008 David Valley - Chemistry - USC

2008 Christina Naify - Materials Science - USC

2008 Duan Zhichao -Mechanical Engineering - USC

2008 Erik Tolmachoff -Mechanical Engineering – USC

2010 Nikil Kar – Materials Science - USC

2011 Arash Noshadravan – Civil Engineering – USC

2011 Christian A. Gutierrez – Biomedical Engineering – USC

2011 Ehsan Barjasteh - Chemical Engineering – USC

2013 Yuzheng Zhang - Materials Science - USC

2014 Yinghui Hu - Mechanical Engineering – USC

2014 Gauri Khanolkar - Mechanical Engineering – USC

2015 Akexander Lusk – Earth Sciences – USC

2018 Amit Jain - Civil Engineering - USC

Undergraduate Students at USC:

1. Reed Doucette (AME), Fall Semester 2007, (Rhodes scholar 2009)
2. Mariela Betancourt (Materials), Summer Semester 2008
3. Tim Furnish (AME) Summer and Fall Semester 2008, Spring 2009
4. Derrick Ike (AME), Fall Semester 2008, spring 2009, Summer 2009
5. Ilya Golosker (AME), Fall Semester 2008, spring-Fall 2009, Spring 2010

6. Cody Nelson (BME), Spring, Summer and Fall 2009, Spring 2010
7. Motunrayo Onafalujo, Fall 2009, Summer 2010
8. Steven Li (AME), Fall 2009, Spring and summer 2010, Spring 2011
9. Monique Warren (CE), Fall 2010, Spring and Fall 2011.
10. Jason Zide (AME), Spring 2012
11. Georg Ristock (AME), Fall and Spring 2012
12. Carlos Portela (AME), Summer and Fall 2013, Spring 2014
13. Lyssa Aruda (MASC), Spring, Summer and Fall 2014, Spring 2015
14. Andrew Lindo (AME), Spring, Summer and Fall 2014, 2015 and 2016
15. Marion Wood (AME), Spring and Fall 2017, 2018 and 2019
16. Sheetal Madnani (MFD) Spring and Fall 2018 and 2019
17. Natalie Reck (AME) Spring and Fall 2018, 2019 and Spring 2020
18. Vania Jiao (AME) Spring, Summer and Fall 2020, Spring 2021
19. Kwayera Burrows (AME) Summer 2020, Summer 2021

LEADERSHIP AND SERVICE

- Committee Member, Defense Materials, Manufacturing and its Infrastructure (DMMI), The National Academies of Sciences, Engineering, and Medicine (2021-present)
- Advisory Board, Northwestern University, Materials Science and Engineering Department (2016-2022)
- Advisory Board, UC Riverside, Mechanical Engineering Department (2015-2020)
- Board of Directors – Materials Research Society (2013-2015)
- Editorial Board – Principal Editor, Journal of Materials Research (2012-2015)
- Editorial Board - Metallurgical and Materials Transactions A (2004-2013)
- Guest Editor – Acta Biomaterialia (January 2007)
- Guest Editor - Journal of the Mechanical Behavior of Biomedical Materials (2007-2008)
- TMS Awards Selection Committee (2019-present)
- MRS Awards Selection Committee (2020- present)
- International Conference on Strength of Materials (ICSMA19) - International Scientific Committee member (2020- present)

Conference/Society Service

- 2022 Conference Chair - Gordon Conference, Structural Nanomaterials, Les Diablerets, Switzerland**
- 2018 Conference vice- Chair - Gordon Conference, Structural Nanomaterials, Hong Kong
- 2011 Conference Chair - Materials Research Society (MRS) Summer meeting - IMRC 2011 Cancun, Mexico (This conference had over 2000 attendees).**
- 2008 Symposium Co-chair - MRS Spring Meeting - Nanomechanics Symposium San Francisco, CA.**
- 2006 Symposium Chair - The Mineral Metals and Materials Society (TMS) Biological Materials Science Symposium, El Paso, Texas.
- 2007 Symposium Chair – The Mineral Metals and Materials Society (TMS) Biological Materials Science Symposium, Orlando, Florida.

Journal Paper Reviewer

- 2008- present Science
- 2009 - present Nano Letters
- 2009 - present Acta Materialia
- 2009 - present Scripta Materialia
- 2008 - present Metallurgical and Materials Transactions A (Key Reader)
- 2008 - present Philosophical Magazine
- 2008 - 2011 Thin Solid Films
- 2008 – 2015 Journal of Materials Research (Topic Editor)
- 2011 Corrosion
- 2010 Vacuum
- 2013-present Nature Materials

Proposal Reviewer

- 2008- present National Science Foundation
- 2011 - present Army Research Office
- 2011 - present Department of Energy

- 2013 – present Austrian Science Fund
- 2020 – present Swiss National Science Foundation

Department Service

- 2020 MDF Department Admissions Committee
- 2016 MDF Department Search Committee Chair
- 2015 MDF Department Admissions Committee Chair
- 2009 AME Department Admissions Committee Member
- 2010 AME Department Admissions Committee Chair
- 2011 AME Department Admissions Committee Chair
- 2013 AME Department Chair Search Committee Member
- 2014 AME Department Admissions Committee Chair

University and Other Service

- 2020 – present University Committee on Appointments, Promotions, and Tenure
- 2009 - 2022 USC Society of Hispanic Professional Engineers Chapter – Faculty Advisor
- 2016 - 2020 Provost Representative – Norman Topping Student Aid Fund
- 2010 - 2015 USC-Center for Electron Microscopy and Microanalysis (CEMMA) Oversight Committee
- 2010 USC Provost Search Faculty Advisory Committee
- 2008 - 2010 Viterbi WiSE Committee member
- 2003 - 2004 Chemistry and Materials Science Post Doctoral Program, Lawrence Livermore National Laboratory Post-doc liaison (2003-2004)
- 1998 - 1999 Materials Science Student Association, Northwestern University Vice President (1998-99)