James A. Monroe

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Department of Mechanical Engineering
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A. Areas of Expertise: Processing, microstructure and mechanical property relationships of high temperature and meta-magnetic shape memory alloys; powder metallurgy; twinning and thermoelastic martensitic transformations in metallic materials; magnetic, thermal and mechanical stabilization of martensitic transformations.

B. Professional Preparation:

Texas A&M University — Mechanical Engineering, B.S. 2008

C. Appointments:

2009 – date	Research Assistant, Texas A&M University, Department of Mechanical Engineering
2009	Summer Research Assistant, NASA Glenn Research Center, Cleveland, OH
2009	Teaching Assistant, Texas A&M University, Department of Mechanical Engineering
2008	Summer Research Assistant, University of Paderborn, Germany, Department of Mechanical Engineering
2006 – 2008	Undergraduate Researcher, Texas A&M University, Department of Mechanical Engineering
2004 – 2006	Team Leader, Space Engineering Institute's Camera Stabilization Team

D. Publications:

1. **J.A. Monroe**, J. Cruz-Perez, C. Yegin, I. Karaman, A.B. Geltmacher, R. Kainuma, "Magnetic Response of Porous NiCoMnSn Meta-Magnetic Shape Memory Alloys Fabricated using Solid-State Replication," Submitted to *Scripta Materialia* October 2011.
2. **J.A. Monroe**, Ibrahim Karaman, Dimitris C. Lagoudas, Glen Bigelow, Ronald D. Noebe, Santo Padula II, 2010 "Recoverable and Irrecoverable Contributions to Accumulated Strain in a NiTiPd High Temperature Shape Memory Alloy During Thermo-Mechanical Cycling*," Scripta Materialia* Vol. 65, pp. 123-126.
3. P.K. Kumar, U. Desai, **J.A. Monroe**, D.C. Lagoudas, I. Karaman, G. Bigelow, R. Noebe, 2010 "Phase Transformations and Creep Behavior in Ti50Pd30Ni20 High Temperature Shape Memory Alloy in Compression," Proc. of SPIE Vol. 7644
4. **J.A. Monroe**, P.K. Kumar, I. Karaman, D.C. Lagoudas, G. Bigelow, R. Noebe, S. Padula II, 2010 "Competing Mechanisms of Phase Transformation, Plasticity and Creep in High Temperature Shape Memory Alloys," SMST Conference Proceedings.
5. **J.A. Monroe**, I. Karaman, H.E. Karaca, Y.I. Chumlyakov, H.J. Maier, 2010 "High-temperature superelasticity and competing microstructural mechanisms in Co49Ni21Ga30 shape memory alloy single crystals under tension," *Scripta Materialia*, Vol. 62, pp. 368-371.

E. Honors and Distinctions:

- IGERT Fellow, 2010-date
- First Place Oral Presentation at Student Research Week, 2008
- Distinguished Student Award Dwight Look College of Engineering, 2005
- Aggie Bound Scholarship, 2004 – 2008
- Excellence in Education Scholarship, 2004 – 2006
- Aggie Stars Scholarship, 2004 – 2006
- National Hispanic Scholar, 2003
- Eagle Scout, 2003