James Robert Morris
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Education/Training:

Ames Laboratory	Postdoc	1992-1996	Physics
Cornell University	Ph.D.	1992	Physics
Colorado State University	B.S.	1987	Physics

Professional Experience:

2016 – present	Group Leader, Materials Theory Group
2014 – 2017	ORNL Lab Coordinator, Basic Energy Sciences - Materials Science & Engineering Program
2005 – present	Department of Materials Science & Engineering, University of Tennessee
2003 – present	Oak Ridge National Laboratory
1996 – 2003	Staff, Ames Laboratory / Iowa State University

Professional Activities, Honors, Awards:

- R&D 100 Award Winner for "ACMZ alloys for next generation automotive engines" (2017) (Amit Shyam, PI; Fiat Chrysler Automobiles US LLC and Nemak U.S.A. Inc., co-developers)
- Member, Editorial board of *Intermetallics* (2014-present).
- University of Tennesee's Materials Science & Engineering Award, "Faculty Excellence in Teaching," 2012.
- AMS society J. Willard Gibbs Phase Equilibria Award Selection Committee, 2010-2013.
- TMS society John Bardeen Award Selection Committee, 2009-2012.
- ASM Phase Diagram Committee, (2004-2012).
- TMS society Electronic, Magnetic & Photonic Materials Division's Public and Governmental Affairs Committee representative (2008-2011).
- Scientific Review Panel, DOE Basic Research for the Hydrogen Fuel Initiative, March 2007.
- Chair, Chemistry and Physics of Materials Committee, TMS Society (2005-2008).

Selected Publications: (>110 Journal and refereed conference proceedings papers. H-index 35 from Google Scholar.)

1. R. J. Olsen, A. K. Gillespie, C. I. Contescu, J. W. Taylor, P. Pfeifer, and J. R. Morris, "A phase transition of H_2 in subnanometer pores observed at 75 Kelvin," *ACS Nano* **11**, 11617 (2017).
2. Yungok Ihm, Valentino R. Cooper, Lukas Vlcek, Pieremanuele Canepa, Timo Thonhauser, Ji Hoon Shim, and James R. Morris, "Continuum Model of Gas Uptake for Inhomogeneous Fluids," *J. Phys. Chem. C* **121**, 17625 (2017).
3. Z. Wu, M. C. Troparevsky, Y. F. Gao, J. R. Morris, G. M. Stocks, H. Bei, "Phase stability, physical properties and strengthening mechanisms of concentrated solid solution alloys," *Curr. Opin. Solid State Mater. Sci.* ***21****, 267 (2017)*.
4. M. Claudia Troparevsky, James R. Morris, Paul R. C. Kent, Andrew R. Lupini, and G. Malcolm Stocks, "Criteria for predicting the formation of single-phase high-entropy alloys," *Phys. Rev. X* **5**, 011041 (2015).
5. Ling Li, James Morris, Michael Koehler, Zhiling Dun, Haidong Zhou, Jiaqiang Yan, David Mandrus, Veerle Keppens, "Structural and magnetic phase transitions in $EuTi_{1-x}Nb_xO_3$," *Phys. Rev. B* **92**, 024109 (2015) (Editor's Choice).

6. M. Claudia Troparevsky, James R. Morris, Markus Daene, Yang Wang, Andrew R. Lupini, and G. Malcolm Stocks, "Beyond atomic sizes and Hume-Rothery Rules: Understanding and predicting high entropy alloys," *JOM* **67**, 2350 (2015).
7. J. R. Morris, V. R. Cooper and F. W. Averill, "Theoretical studies of Ir_5Th and Ir_5Ce nanoscale precipitates in Ir," *Phil. Mag.* **94**, 991 (2014).
8. M. Krcmar and James R. Morris, "A comparative first-principles study of martensitic phase transformations in $TiPd_2$ and TiPd intermetallics," *J. Phys. C* **26**, 135401 (2014).
9. D. Wu, J. R. Morris and T. G. Nieh, "Effect of tip radius on the incipient plasticity of chromium studied by nanoindentation," *Scripta Mat.* **94**, 52 (2015).
10. C. I. Contescu, H. Zhang, R. Olsen, E. Mamontov, J. R. Morris, and N. C. Gallego, "Isotope effect on adsorbed quantum phases: hydrogen and deuterium on nanoporous carbon," *Phys. Rev. Lett.* **110**, 236102 (2013).

Synergistic Activities:

- Co-organizer (with Haixuan Xu, Blas Uberuaga, and Michael Tonks), "Computational Materials Science and Engineering for Nuclear Energy," TMS Annual Meeting, March 11-15, 2018.
- Co-organizer (with Niaz Abdolrahim; Stephen Foiles; and Raymundo Arroyave), "Computational Thermodynamics and Kinetics," TMS Annual Meeting, February 26 – March 2, 2017.
- Primary Organizer (with J. Yu, A. P. Horsfield, and N. Li), "Materials behavior under extreme irradiation, stress or temperature," MRS Spring Meeting, April 2014.
- Deputy Director, Energy Frontier Research Center for Defect Physics (2010-2013).
- Primary Organizer, EFRC summer school "Defects, Deformation and Damage in Structural Materials," Knoxville, TN (June 2012).
- Co-organizer (with R. Arroyave, V. Ozolins and J.J. Hoyt), "Computational Thermodynamics and Kinetics," TMS Annual Meeting, Feb. 2011.
- Co-organized EFRC summer school, "Atomic-level Response of Materials to Irradiation," (Santa Fe, 2010).
- Co-organizer (with V. K. Pecharsky and A. Tiwari) "Acta Materialia Gold Medal Award Symposium: Recent Developments in Rare Earth Science and Technology," TMS Annual Meeting, 2008.
- Co-organizer (with D.J. Singh and D. Mandrus) ORNL Symposium, "Materials for Energy," 2008.
- Associate editor, Philosophical Magazine 86, No. 24 (2006) issue on Frontiers in Solidification Science.
- Co-advisor, JOM 2006 topic "Neutron Scattering Applied to Traditional Materials Problems."

Graduate and Postdoctoral Advisors and Advisees:

Ph.D. Advisor: R. J. Gooding, Queen's University
J. A. Krumhansl (deceased), Department of Physics, Cornell University

Postdoctoral Advisor: K. M. Ho, Ames Laboratory / Iowa State University

Collaborators from other Institutions (past 48 months)**:**

G. Pharr, Texas A&M; K.F. Kelton, University of Washington; V. Keppens, P. K. Liaw, T. G. Nieh, H. Xu, Univ. of Tennessee; M. Krcmar, Grand Valley State University; X. C. Zeng, Univ. of Nebraska.

Thesis Advisor and Postgraduate-Scholar Sponsor (last 5 years):

Scholars – Jae-Wook Lee (Korean Institute of Materials Science), Yungok Ihm (2011-2015), Raina Olsen (2011-2013). **Students –** L.J. Peng (Ph.D. 2012), Alex Arrico (M.S. 2014).