Jason M Larkin
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EDUCATION

Carnegie Mellon University, Pittsburgh, PA
Ph.D. Mechanical Engineering GPA: 3.9 **2009-2013**
-Research: Thermal Modeling of Disordered Materials
-**Advisor:** Alan J.H. McGaughey
-Coursework: Molecular and Electron Structure Simulation, Nanoscale Transport Phenomena

University of Pittsburgh, Pittsburgh, PA
M.S. Mechanical Engineering GPA: 3.7 **2007-2009**
-Thesis: Statistics of Particle Concentrations in Free-Surface Turbulence
-Advisor: Walter I. Goldburg
-Coursework: Quantum and Statistical Physics, Chaos and Nonlinear Phenomena
B.S. Mechanical Engineering GPA: 3.2 **2003-2007**
-Research: FEA modeling of novel flow chamber to study development of aneurysms.

AWARDS

Northrop-Grumann Fellow, Carnegie Institute for Complex Engineered Systems (ICES) **2011**
NSF Graduate Student Research Grant, University of Pittsburgh Dept. of Physics **2007-2009**

TEACHING EXPERIENCE

Carnegie Mellon University
Teaching Assistant – 24-322: Heat Transfer **2010-2011, 2011-2012**
Topics in conduction, convection, radiation and heat exchangers. Supervised recitation sessions and substituted for several lectures.
University of Pittsburgh
Teaching Assistant – Advanced Fluid Mechanics **2008**
Topics in Fluid Mechanics including viscous flow, boundary layer theory, and scale similarity.
Lecturer – Physics **2007-2009**
Administered lectures to undergraduate students, graduate students, and faculty on topics ranging from Mathematics, Turbulence, Bio-Physics, Statistical Physics, and Nonlinear Phenomena.

PUBLICATIONS

A.J.H. McGaughey and J.M. Larkin, “Predicting Phonon Properties from Equilibrium Molecular Dynamics Simulations”, Advances in Heat Transfer Volume 40 (Academic Press, 2013).

S.C. Huberman, J.M. Larkin, A.J.H. McGaughey, C.H. Amon, “Mean Free Paths of Phonons in Superlattices from Normal Mode Decomposition”, *Phys. Rev. B* (draft in progress).

J.M. Larkin, A.J.H. McGaughey, “Predicting Vibrational Mean Free Paths in Disordered Systems”, *Phys. Rev. B* (draft in progress).

J.M. Larkin, A.J.H. McGaughey, “Evaluation of the Virtual Crystal Approximation for Predicting Thermal Conductivity”, *Phys. Rev. B* (draft submitted).

J. M. Larkin, A.D. Massicotte, J.E. Turney, C.H. Amon, A.J.H. McGaughey, “Comparison and Evaluation of Spectral Energy Methods for Predicting Phonon Properties”, to appear in Journal of Computational and Theoretical Nanoscience.

S. Stefanus, J. Larkin, W. Goldburg, “A Search for Conformal Invariance in Compressible Two Dimensional Turbulence”, *Phys. Fluids* **23** (2011) 105101 (appeared on cover).

J. Larkin, W. Goldburg, M.M. Bandi, “Time-Evolution of a fractal distribution: Particle concentrations in free-surface turbulence”, *Physica D* **239** 14 (2010) 1264-1268.

J. Larkin, W. Goldburg, “Decorrelating a Compressible Turbulent Flow: an Experiment”, *Phys. Rev. E* **82**, 016301 (2010).

J. Larkin, M.M. Bandi, A. Pumir, W. Goldburg , “Power-law distributions of particle concentration in free-surface flows”, *Phys. Rev. E* **80**, 066301 (2009).

PRESENTATIONS

“Predicting Vibrational Mean Free Paths in Disordered Systems”, J.M. Larkin, A.J.H. McGuaghey, to be presented at 2013 ASME Summer Heat Transfer Conference Minneapolis, MN.

“Effect of Interspecies Mixing on Phonon Mean Free Paths in Superlattices”, S.C. Huberman, J.M. Larkin, A.J.H. McGaughey, C.H. Amon, to be presented at 2013 ASME Summer Heat Transfer Conference Minneapolis, MN.

“Origin of Thermal Conductivity Changes in Strained Systems”, K. Parrish, J.M. Larkin, A.J.H. McGaughey, to be presented at 2013 ASME Summer Heat Transfer Conference Minneapolis, MN.

“Evaluation of the Virtual Crystal Approximation for Predicting Thermal Conductivity”, J.M. Larkin (speaker), A.J.H. McGaughey, presented at 2013 MRS Spring Meeting San Francisco, CA.

“Ordered and Disordered Contributions to Lattice Thermal Conductivity”, J.M. Larkin (speaker), A.J.H. McGaughey, presented at 2012 PHONONS Conference Ann Arbor, MI.

“Predicting Phonon Properties of Silicon from First-Principles Calculations”, J.M. Larkin, A.J.H. McGaughey (speaker), W.A. Al-Saidi, presented at 2012 ASME Summer Heat Transfer Conference Puerto Rico, USA.

“Comparison of Spectral Energy Methods for Predicting Phonon Properties”, J.M. Larkin, A.D. Massicotte, J.E. Turney, C.H. Amon, A.J.H. McGaughey (speaker), presented at 2012 ASME Micro/Nanoscale Heat & Mass Transfer International Conference Atlanta, GA.

“Predicting Thermal Conductivity of Defected Systems using the Spectral Energy Density”, J. Larkin (speaker), A.J.H. McGaughey, 2011 MRS Fall Meeting Boston, MA.

“Predicting Thermal Conductivity of Defected Systems using the Spectral Energy Density”, J. Larkin 2011 Bennett Presentation (Award for Best Presentation).

“Decorrelating a Compressible Turbulent Flow: An Experiment”, J. Larkin, W. Goldburg (speaker), 2010 American Physical Society March Meeting Portland, OR.

“Statistics of Preferential Particle Concentration in Free-Surface Turbulence”, J. Larkin (speaker), M.M. Bandi, W. Goldburg, 2009 American Physical Society March Meeting Pittsburgh, PA.

“Experimental Determination of the von Karman Constant in Turbulent Two Dimensional Soap Film Flows”, Nicholas Guttenberg (speaker), Nigel Goldenfeld, Jason Larkin, Alisia Prescott, Hamid Kellay, Walter Goldburg, 2008 Meeting of the APS Division of Fluid Dynamics San Antonio, TX.

“Turbulent Dynamics of a Hydraulic Jump in two dimensions: Soap Film Flow” Jason Larkin (speaker), Walter Goldburg, Tuan Tran, Pinaki Chakraborty, Gustavo Goia, 2008 Meeting of the APS Division of Fluid Dynamics San Antonio, TX.

“The Generalized Fractal Dimensions of a 2-D Compressible Turbulence”, J. Larkin (speaker), M.M. Bandi, W. Goldburg, 2008 American Physical Society March Meeting New Orleans, LA.

“Design of a Flow Chamber to Explore the Initiation and Development of Cerebral Aneurysms”, J. Larkin, J. P. Barrow, A. M. Robertson, 2007 Biomedical Engineering Society Meeting Undergraduate Presentation Los Angeles, CA

MEMBERSHIPS

American Physical Society, American Society of Mechanical Engineers, Materials Research Society, Society of Industrial and Applied Mathematics, Department of Defense High Performance Computing Modernization Program

Projects

Open-source Codes

GULP: contributed to

LAMMPS: contributed to modules which allow for the

ntpy: a python module for performing wrapping of Molecular and Lattice Dynamics Calculations.