
EDUCATION

Carnegie Mellon University, Pittsburgh, PA

Ph.D. Mechanical Engineering GPA: 3.9

2009-

-Research: Predicting Thermal Properties using *Ab-Initio* Calculations, 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 initiation and development of aneurysms.

AWARDS

- Northrop-Grumman Fellow, CIT Institute for Complex Engineered Systems (ICES) **2011**
- NSF Graduate Student Research Grant, University of Pittsburgh Department of Physics **2007-2009**

TEACHING EXPERIENCE

Carnegie Mellon University

Teaching Assistant – 24-322: Heat Transfer

2010-2011

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 general Nonlinear Phenomena.

PUBLICATIONS

- 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", *Phys. Rev. B* (draft submitted).
- S. Stefanus, J. Larkin, W. Goldburg, "A Search for Conformal Invariance in Compressible Two Dimensional Turbulence", *Phys. Fluids* **23** (2011) 105101.
- 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 Phonon Properties of Silicon from First-Principles Calculations", J.M. Larkin, A.J.H. McGaughey, W.A. Al-Saidi, *to be 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, *to be 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 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", Jason Larkin, John 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