Aidan P. Thompson

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EDUCATION

Ph.D., Chemical Engineering, University of Pennsylvania, 1994

M.S.E, Chemical Engineering, University of Pennsylvania, 1991

B.S., Chemical Engineering, University College Dublin, 1986

RESEARCH INTERESTS

Data-Driven Interatomic Potentials
spectral neighbor analysis potential (SNAP)
automated training and validation software (FitSNAP)
rotation-invariant atomic environment descriptors
ab initio training data generation

Atomistic Materials Simulation
interatomic potential development
equilibrium and non-equilibrium molecular dynamics
kinetic Monte Carlo
equilibrium Monte Carlo
statistical physics

High-Performance Computing
scalable parallel algorithms
code optimization for advanced architectures
software development for leadership computing platforms

EMPLOYMENT HISTORY

Principal Member of the Technical Staff
Sandia National Laboratories (Oct. 2005 - Present)

Senior Member of the Technical Staff
Sandia National Laboratories (Mar. 1999 - Oct. 2005)

Limited Term Employee
Sandia National Laboratories (Jun. 1997 - Mar. 1999)

Senior Research Scientist
Union Camp Coorporation (Sept. 1994 - Jun. 1997)

PEER-REVIEWED JOURNAL ARTICLES

53. Y. Zuo, C. Chen, X. Li, Z. Deng, Y. Chen, J. Behler, G. Csanyi, A. V. Shapeev, A. P. Thompson, and M. A. Wood. A performance and cost assessment of machine learning interatomic potentials. *J. Phys. Chem. A*, 124:731, 2020.

52. M. A. Wood, M. A. Cusentino, B. D. Wirth, and A. P. Thompson. Data-driven material models for atomistic simulation. *Phys. Rev. B*, 99:184305, 2019.

51. J. M. D. Lane , K. Leung, A. P. Thompson, and M. E Cuneo. Water desorption from rapidly-heated metal oxide surfaces-first principles, molecular dynamics, and the temkin isotherm. *J. Phys.: Condens. Matter*, 30:465002, 2018.

50. J. Tranchida, S. J. Plimpton, P. Thibaudeau, and A. P. Thompson. Massively parallel symplectic algorithm for coupled magnetic spin dynamics and molecular dynamics. *J. Comp. Phys.*, 148:241721, 2018.

49. M. A. Wood and A. P. Thompson. Extending the accuracy of the snap interatomic potential form. *J. Chem. Phys.*, 148:241721, 2018.

48. M. A. Wood, D. E. Kittell, C. D. Yarrington, and A. P. Thompson. Multiscale modeling of shock wave localization in porous energetic material. *Phys. Rev. B*, 97:014109, 2017.

47. T.-R. Shan, R. R. Wixom, and A. P. Thompson. Micron-scale reactive atomistic simulations of void collapse and hotspot growth in petn. *Proceedings 15th International Detonation Symposium*, page 962, 2015.

46. J. M. D. Lane, A. P. Thompson, and T. J. Vogler. Enhanced densification, strength and molecular mechanisms in shock compressed porous silicon. *Shocked Compression of Condensed Matter*.

45. T. R. Shan, R. R. Wixom, and A. P. Thompson. Extended asymmetric hot region formation due to shockwave interactions following void collapse in shocked high explosive. *Phys. Rev. B*, 94:054308, 2016.

44. A. P. Thompson , L.P. Swiler, C.R. Trott, S.M. Foiles, and G.J. Tucker. Snap: Automated generation of quantum-accurate interatomic potentials. *J. Comp. Phys.*, 285:316, 2015.

43. C.R. Trott, S.D. Hammond, and A. P. Thompson. Snap: Strong scaling high fidelity molecular dynamics simulations on leadership-class computing platforms. *Supercomputing*.

42. J.M.D. Lane, A. P. Thompson, and T.J. Vogler. Enhanced densification under shock compression in porous silicon. *Phys. Rev. B*, 90:134311, 2014.

41. S. Levy, K. B. Ferreira, P. G. Bridges A. P. Thompson, and C. R. Trott. Evaluating the feasibility of using memory content similarity to improve system resilience. *International Journal of High Performance Computing*, 28:11, 2014.

40. T. Shan and A. P. Thompson. Shock-induced hotspot formation and chemical reaction initiation in petn containing a spherical void. *Journal of Physics: Conference Series*, 500:172009, 2014.

39. A. P. Thompson and T. Shan. Reactive atomistic simulations of shock-induced initiation processes in mixtures of ammonium nitrate and fuel oil. *Journal of Physics: Conference Series*, 500:052046, 2014.

38. R. J. Bondi, M. P. Desjarlais, A. P. Thompson , G. L. Brennecka, and M. J. Marinella. Electrical conductivity in oxygen-deficient phases of tantalum pentoxide from first-principles calculations. *J. Appl. Phys.*, 114:203701, 2013.

37. S. Root, T. A. Haill, J. M. D. Lane, A. P. Thompson , G. S. Grest, D. G. Schroen, and T. R. Mattsson. Shock compression of hydrocarbon foam to 200 gpa: Experiments, atomistic simulations, and mesoscale hydrodynamic modeling. *J. Appl. Phys.*, 114:103502, 2013.

36. T.-R. Shan, R. R. Wixom, A. E. Mattsson, and A. P. Thompson . Atomistic simulation of orientation dependence in shock-induced initiation of pentaerythritol tetranitrate. *J. Phys. Chem. B*, 117:928, 2013.

35. S. J. Plimpton and A. P. Thompson . Computational aspects of many-body potentials. *Mat. Res. Soc. Bulletin*, 37:513, 2012.

34. P. L. Theofanis, A. Jaramillo-Botero, W. A. Goddard III, T. R. Mattsson, and A. P. Thompson . Electron dynamics of shocked polyethylene crystal. *Phys. Rev. B*, 85:094109, 2012.

33. A. P. Thompson, J. M. D. Lane, and M. Desjarlais. Molecular dynamics simulation of dynamic response of beryllium. *Shocked Compression of Condensed Matter*.

32. S. Jayaraman, A. P. Thompson, and O. A. von Lilienfeld. Molten salt eutectics from atomistic simulations. *Phys. Rev. E*, 84:030201, 2011.

31. H. Asegun, G. Chen, S. J. Plimpton, and A. P. Thompson. 1d-to-3d transition of phonon heat conduction in polyethylene using molecular dynamics simulations. *Phys. Rev. B*, 82:144308, 2010.

30. S. V. Zybin, W. A. Goddard, P. Xu, A. C. T. van Duin, and A. P. Thompson. Physical mechanism of anisotropic sensitivity in pentaerythritol tetranitrate from compressive-shear reaction dynamics simulations. *Appl. Phys. Lett.*, 96:081918, 2010.

29. S. Martin, A. P. Thompson, E. A. Coutsias, and J. P. Watson. Topology of cyclo-octane energy landscape. *J. Chem. Phys.*, 132:234115, 2010.

28. W. M. Brown, A. P. Thompson, and P. A. Schultz. Efficient hybrid evolutionary optimization of interatomic potential models. *J. Chem. Phys.*, 132:024108, 2010.

27. T. R. Mattsson, J. M. D. Lane, K. R. Cochrane, M. P. Desjarlais, A. P. Thompson, F. Pierce, and G. S. Grest. First-principles and classical molecular dynamics simulation of shocked polymers. *Phys. Rev. B*, 81:054103, 2010.

26. S. Jayaraman, A. P. Thompson, O. A. von Lilienfeld, and E. J. Maginn. Molecular simulation of the thermal and transport properties of three alkali nitrate salts. *Ind. & Eng. Chem. Res.*, 49:559, 2010.

25. A. P. Thompson, S. J. Plimpton, and W. Mattson. General formulation of pressure and stress tensor for arbitrary many-body interaction potentials under periodic boundary conditions. *J. Chem. Phys.*, 131:154107, 2009.

24. J. Budzien, A. P. Thompson, and S. V. Zybin. Reactive molecular dynamics simulations of shock through a single crystal of pentaerythritol tetranitrate. *J. Phys. Chem. B*, 113:13142, 2009.

23. A. P. Thompson, J. M. D. Lane , M. P. Desjarlais, and M. I. Baskes. Molecular dynamics simulation of dynamic response of beryllium. *Shocked Compression of Condensed Matter*, page CP1195, 833.

22. J. M. D. Lane and A. P. Thompson. Molecular dynamics simulation of shock-induced phase transformation in germanium. *Shocked Compression of Condensed Matter*, page CP1195, 1157.

21. A. A. Selezenev, A. Yu. Aleynikov, N. S. Ganchuk, P.V. Ermakov, S. N. Ganchuk, J. B. Aidun, and A. P. Thompson. Shock compression calculation of rdx and petn molecular crystals using hugoniostat method. *Shocked Compression of Condensed Matter*, page CP1195, 821.

20. J. Budzien, D. R. Rottach, J. G. Curro, C. S. Lo, and A. P. Thompson. A new constitutive model for the chemical aging of rubber networks in deformed states. *Macromolecules*, 41:9896, 2008.

19. A. Slepoy, A. P. Thompson, and S. J. Plimpton. A constant-time kinetic monte carlo algorithm for simulation of large biochemical reaction networks. *J. Chem. Phys.*, 128:205101, 2008.

18. A. Slepoy, M. D. Peters, and A. P. Thompson. Searching for globally optimal functional forms for interatomic potentials using genetic programming with parallel tempering. *J. Comp. Chem.*, 28:2465, 2007.

17. J. Quenneville, T. C. Germann, A. P. Thompson, and E. M. Kober. Molecular dynamics studies of thermal induced chemistry in tatb. *SCCM 2007*.

16. A. H. Edwards, A. C. Pineda, P. A. Schultz, M. G. Martin, A. P. Thompson, H. P. Hjalmarson, and C. J. Umrigar. Electronic structure of intrinsic defects in crystalline germanium telluride. *Phys. Rev. B*, 73:45210, 2006.

15. A. H. Edwards, A. C. Pineda, P. A. Schultz, M. G. Martin, A. P. Thompson, and H. P. Hjalmarson. Theory of persistent, p-type, metallic conduction in c-gete. *J. Phys.: Cond. Mat.*, 17:329–35, 2005.

14. D. Rottach, J. G. Curro, G. S. Grest, and A. P. Thompson. Effect of strain history on stress and permanent set in crosslinking networks: A molecular dynamics study. *Macromolecules*, 37: 5468, 2004.

13. M. G. Martin and A. P. Thompson. Industrial property prediction using towhee and lammps. *Fluid Phase Equilibria*, 217:105, 2004.

12. A. P. Thompson. Non-equilibrium molecular dynamics simulation of electroosmotic flow in a charged nanopore. *J. Chem. Phys.*, 119:7503, 2003.

11. M. G. Martin, A. P. Thompson, and T. M. Nenoff. Effect of pressure, membrane thickness and placement of control volumes on the flux of methane through thin silicalite membranes. *J. Chem. Phys.*, 114:7174, 2001.

10. M. Chandross, E. B. Webb, G. S. Grest, M. G. Martin, A. P. Thompson, and M. W. Roth. Dynamics and exchange at gas-zeolite interfaces i: Pure component butane and isobutane. *J. Phys. Chem. B*, 105:5700, 2001.

9. P. S. Rallabandi, A. P. Thompson, and D. M. Ford. A molecular modeling study of entropic and energetic selectivities in air separation with glassy polymers. *Macromolecules*, 33:3142, 2000.

8. L. J. D. Frink, A. P. Thompson, and A. G. Salinger. Applying molecular theory to steady-state diffusing systems. *J. Chem. Phys.*, 112:7564, 2000.

7. A. P. Thompson and G. S. Heffelfinger. Direct molecular simulation of gradient driven diffusion of large molecules using constant pressure. *J. Chem. Phys.*, 110:10693, 1999.

6. A. P. Thompson, , D. M. Ford, and G. S. Heffelfinger. Direct molecular simulation of gradient driven diffusion. *J. Chem. Phys.*, 109:6406, 1998.

5. D. M. Ford, A. P. Thompson, and E. D. Glandt. Thermodynamics of fluids in random microporous materials from scaled particle theory. *J. Chem. Phys.*, 103:1099, 1995.

4. A. P. Thompson, , and E. D. Glandt. Polymers in random porous materials: Structure, thermodynamics and concentration effects. *Macromolecules*, 29:4314, 1996.

3. A. P. Thompson and E. D. Glandt. Adsorption of polymeric fluids in microporous materials. i. ideal freely-jointed chains. *J. Chem. Phys.*, 99:8325, 1993.

2. A. P. Thompson and E. D. Glandt. Low coverage kinetics of correlated sequential adsorption. *Phys. Rev. A*, 46:4639, 1992.

1. A. P. Thompson and E. D. Glandt. Random sequential adsorption in porous solids. *J. Colloid Interface Sci.*, 146:63, 1991.

BOOK CHAPTERS

4. Marta D'Elia, Pavel Bochev, David J. Littlewood, and Mauro Perego. Optimization-based coupling of local and nonlocal models: Applications to peridynamics. In George Z. Voyiadjis, editor, *Handbook of Nonlocal Continuum Mechanics for Materials and Structures*. Springer, 2019. doi.

3. Pablo Seleson and David J. Littlewood. Numerical tools for effective meshfree discretizations of peridynamic models. In George Z. Voyiadjis, editor, *Handbook of Nonlocal Continuum Mechanics for Materials and Structures*. Springer, 2019. doi.

2. David J. Littlewood. Roadmap for software implementation. In Florin Bobaru, Philippe H. Geubelle, John T. Foster, and Stewart A. Silling, editors, *Handbook of Peridynamic Modeling*, chapter 5. CRC Press, 2016.

1. Yan Azdoud, Fei Han, David J. Littlewood, Gilles Lubineau, and Pablo Seleson. Coupling local and nonlocal models. In Florin Bobaru, Philippe H. Geubelle, John T. Foster, and Stewart A. Silling, editors, *Handbook of Peridynamic Modeling*, chapter 14. CRC Press, 2017.

CONFERENCE PROCEEDINGS

7. David J. Littlewood, Stewart A. Silling, and Paul N. Demmie. Identification of fragments in a meshfree peridynamic simulation. In *Proceedings of the ASME 2016 International Mechanical Engineering Congress and Exposition (IMECE)*, Phoenix, Arizona, 2016. doi.

6. David J. Littlewood, Michael C. Hillman, Edouard Yreux, Joseph E. Bishop, Frank Beckwith, and Jiun-Shyan Chen. Implementation and verification of RKPM in the Sierra/SolidMechanics analysis code. In *Proceedings of the ASME 2015 International Mechanical Engineering Congress and Exposition (IMECE)*, Houston, Texas, 2015. doi.

5. David J. Littlewood, Kyran D. Mish, and Kendall H. Pierson. Peridynamic simulation of damage evolution for structural health monitoring. In *Proceedings of the ASME 2012 International Mechanical Engineering Congress and Exposition (IMECE)*, Houston, Texas, 2012. doi.

4. David J. Littlewood. A nonlocal approach to modeling crack nucleation in AA 7075-T651. In *Proceedings of the ASME 2011 International Mechanical Engineering Congress and Exposition (IMECE)*, Denver, Colorado, 2011. doi.

3. David J. Littlewood. Simulation of dynamic fracture using peridynamics, finite element modeling, and contact. In *Proceedings of the ASME 2010 International Mechanical Engineering Congress and Exposition (IMECE)*, Vancouver, British Columbia, Canada, 2010. doi.

2. David J. Littlewood and Antoinette M. Maniatty. Multiscale modeling of crystal plasticity in Al 7075-T651. In *8th International Conference on Computational Plasticity (COMPLAS VIII)*, Barcelona, Spain, 2005.

1. David J. Littlewood and Ganesh Subbarayan. Maintaining an accurate printer characterization. In *IS&T/SID's Twelfth Color Imaging Conference*, Scottsdale, Arizona, 2004.

SELECTED TECHNICAL REPORTS

5. Janine C. Bennett, Matthew T. Bettencourt, Robert L. Clay, Harold C. Edwards, Micheal W. Glass, David S. Hollman, Hemanth Kolla, Jonathan J. Lifflander, David J. Littlewood, Aram H. Markosyan, Stan G. Moore, Stephen L. Olivier, J. Antonio Perez, Eric T. Phipps, Francesco Rizzi, Nicole L. Slattengren, Daniel Sunderland, and Jeremiah J. Wilke. ASC ATDM level 2 milestone #6015: Asynchronous many-task software stack demonstration. Report SAND2017-9980, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, 2017.

4. David J. Littlewood. Roadmap for peridynamic software implementation. Report SAND2015-9013, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, 2015.

3. David J. Littlewood, Stewart A. Silling, John A. Mitchell, Pablo D. Seleson, Stephen D. Bond, Michael L. Parks, Daniel Z. Turner, Damon J. Burnett, Jakob Ostien, and Max Gunzburger. Strong local-nonlocal coupling for integrated fracture modeling. Report SAND2015-7998, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, 2015.

2. Michael L. Parks, David J. Littlewood, John A. Mitchell, and Stewart A. Silling. Peridigm users' guide v1.0.0. Report SAND2012-7800, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, 2012.

1. Michael L. Parks, David J. Littlewood, Andrew G. Salinger, and John A. Mitchell. Peridigm summary report: lessons learned in development with agile components. Report SAND2011-7045, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, 2011.

PRESENTATIONS

38. David J. Littlewood. A peridynamic framework for modeling crack growth in multiphysics simulations. Workshop on Meshfree Methods and Advances in Computational Mechanics: A Special Event in Celebration of Professor Jiun-Shyan (J.S.) Chen's 60th Birthday, Pleasanton, California, 2019.

37. David J. Littlewood. Peridynamic models for material damage and failure. Purdue Damage Mechanics Challenge Workshop, West Lafayette, Indiana, 2019.

36. David J. Littlewood, Jessica Rimsza, Jennifer M. Frederick, Tara LaForce, and Reese E. Jones. Multiphysics peridynamic models for crack growth in brittle materials. SIAM Conference on Computational Science and Engineering, Spokane, Washington, 2019.

35. David J. Littlewood, Bart van Bloemen Waanders, Arun Hegde, Adam Cook, and Harlan Brown-Shaklee. Computational peridynamics with application to additively manufactured ceramics. USACM Conference on Meshfree and Particle Methods: Applications and Theory, 2018.

34. David J. Littlewood, Michael R. Tupek, J. Antonio Perez, and Brian Lester. Multiscale solid mechanics on next-generation computing hardware. 13th World Congress on Computational Mechanics, New York, New York, 2018.

33. David J. Littlewood, Brian Lester, and Michael R. Tupek. Adapting multiscale solid mechanics codes for next-generation computing platforms. 18th U.S. National Congress for Theoretical and Applied Mechanics, Rosemont, Illinois, 2018.

32. David J. Littlewood. Introduction to peridynamics modeling and applications. MANNA: Modeling, Analysis and Numerics for Nonlocal Applications, Santa Fe, New Mexico, 2017.

31. David J. Littlewood, Coleman Alleman, Guy Bergel, James W. Foulk, III., Alejandro Mota, and Hojun Lim. An agile computational approach to crystal plasticity. 14th U.S. National Congress on Computational Mechanics, Montreal, Canada, 2017.

30. David J. Littlewood, Marta D'Elia, Mauro Perego, and Pavel Bochev. Optimization-based coupling for local and nonlocal models. SIAM Conference on Computational Science and Engineering, Atlanta, Georgia, 2017.

29. David J. Littlewood, Stewart A. Silling, and Paul N. Demmie. Identification of fragments in a meshfree peridynamic simulation. ASME International Mechanical Engineering Congress and Exposition, Phoenix, Arizona, 2016.

28. David J. Littlewood, Timothy B. Costa, and Stephen D. Bond. Peridynamic multiscale finite element methods. World Congress on Computational Mechanics, Seoul, Korea, 2016.

27. David J. Littlewood, Pablo Seleson, and Stewart A. Silling. Coupling meshfree peridynamics with local finite-element models. ASME International Mechanical Engineering Congress and Exposition, Houston, Texas, 2015.

26. David J. Littlewood, Michael C. Hillman, Edouard Yreux, Joseph E. Bishop, Frank Beckwith, and Jiun-Shyan Chen. Implementation and verification of RKPM in the Sierra/SolidMechanics analysis code. ASME International Mechanical Engineering Congress and Exposition, Houston, Texas, 2015.

25. David J. Littlewood. Progress and challenges in computational peridynamics. USACM Workshop on Nonlocal Models in Mathematics, Computation, Science, and Engineering, Oak Ridge, Tennessee, 2015.

24. David J. Littlewood, Stewart A. Silling, Pablo Seleson, and John A. Mitchell. Coupling approaches for integrating meshfree peridynamic models with classical finite element analysis. 13th U.S. National Congress on Computational Mechanics, San Diego, California, 2015.

23. David J. Littlewood, Stewart A. Silling, and Pablo Seleson. Local-nonlocal coupling for modeling fracture. ASME International Mechanical Engineering Congress and Exposition, Montreal, Canada, 2014.

22. David J. Littlewood, Jesse D. Thomas, and Timothy R. Shelton. Estimation of the critical time step for peridynamic models. U.S. National Congress on Theoretical and Applied Mechanics, East Lansing, Michigan, 2014.

21. David J. Littlewood. Coupling peridynamics and classical finite elements. ASME International Mechanical Engineering Congress and Exposition, San Diego, California, 2013.

20. David J. Littlewood, Michael L. Parks, John A. Mitchell, and Stewart A. Silling. The peridigm framework for peridynamic simulations. 12th U.S. National Congress on Computational Mechanics, Raleigh, North Carolina, 2013.

19. David J. Littlewood, Timothy R. Shelton, and Jesse D. Thomas. Global estimation of the critical time step for peridynamic models. SIAM Conference on Mathematical Aspects of Materials Science, Philadelphia, Pennsylvania, 2013.

18. David J. Littlewood, Veena Tikare, and John Bignell. Informing macroscale constitutive laws through peridynamic modeling of grain-scale mechanisms in plutonium oxide. Workshop on Nonlocal Damage and Failure: Peridynamics and Other Nonlocal Models, San Antonio, Texas, 2013.

17. David J. Littlewood, Kyran D. Mish, and Kendall H. Pierson. Quasi-statics, modal analysis, and structural health monitoring within the peridynamic framework. ASME International Mechanical Engineering Congress and Exposition, Houston, Texas, 2012.

16. David J. Littlewood and Veena Tikare. Peridynamic modeling of void collapse in representative plutonium oxide microstructures. ASME International Mechanical Engineering Congress and Exposition, Houston, Texas, 2012.

15. David J. Littlewood, John T. Foster, and Brad L. Boyce. Peridynamic modeling of localization in ductile metals. 22nd International Workshop on Computational Mechanics of Materials, Baltimore, Maryland, 2012.

14. David J. Littlewood. A nonlocal approach to modeling crack nucleation in AA 7075-T651. ASME International Mechanical Engineering Congress and Exposition, Denver, Colorado, 2011.

13. David J. Littlewood and Tracy J. Vogler. Modeling dynamic fracture with peridynamics, finite element modeling, and contact. 11th U.S. National Congress on Computational Mechanics, Minneapolis, Minnesota, 2011.

12. David J. Littlewood. Simulation of dynamic fracture using peridynamics, finite element modeling, and contact. ASME International Mechanical Engineering Congress and Exposition, Vancouver, British Columbia, Canada, 2010.

11. David J. Littlewood, Alex Lindblad, Arne S. Gullerud, and Nathan K. Crane. Modeling fragment size distributions in dynamic loading simulations. 10th U.S. National Congress on Computational Mechanics, Columbus, Ohio, 2009.

10. David J. Littlewood, Antoinette M. Maniatty, and Fujun Xu. Modeling grain structure evolution in asymmetric rolling. 2007 ASME International Mechanical Engineering Congress and Exposition, Seattle, Washington, 2007.

9. David J. Littlewood, Antoinette M. Maniatty, Fujun Xu, and Jing Lu. Multiscale modeling of finite deformation in polycrystalline materials. 9th U.S. National Congress on Computational Mechanics, San Francisco, California, 2007.

8. David J. Littlewood, Jing Lu, and Antoinette M. Maniatty. Relating properties of metals to microstructure and processing through grain-scale modeling. 3rd Annual Tech Valley Engineering Symposium, Troy, New York, 2007.

7. David J. Littlewood and Antoinette M. Maniatty. Application of crystal plasticity to fatigue damage modeling for Al 7075-T651. 7th World Congress on Computational Mechanics, Los Angeles, California, 2006.

6. David J. Littlewood and Antoinette M. Maniatty. Crystal plasticity modeling of Al 7075. Center for Automation Technologies and Systems Open House, Rensselaer Polytechnic Institute, Troy, New York, 2006.

5. David J. Littlewood and Antoinette M. Maniatty. Multiscale modeling of crystal plasticity in Al 7075-T651. 8th International Conference on Computational Plasticity (COMPLAS VIII), Barcelona, Spain, 2005.

4. David J. Littlewood and Ganesh Subbarayan. Maintaining an accurate printer characterization. IS&T/SID's Twelfth Color Imaging Conference, Scottsdale, Arizona, 2004.

3. David J. Littlewood and Ganesh Subbarayan. Maintaining an accurate printer calibration. Xerox Corporation, Webster, New York, 2004.

2. David J. Littlewood and Ganesh Subbarayan. Maintaining an accurate printer calibration. University of Colorado Department of Mechanical Engineering, Boulder, Colorado, 2001.

1. David J. Littlewood and Ganesh Subbarayan. Pareto-optimal formulations for printer color management. University of Colorado Department of Mechanical Engineering, Boulder, Colorado, 2001.

COURSES TAUGHT

7. John T. Foster, David J. Littlewood, and Pablo Seleson. Peridynamic theory of solid mechanics: Modeling, computation, and applications. Short Course, 15th U.S. National Congress on Computational Mechanics, Austin, Texas, 2019. *To appear.*

6. John T. Foster, David J. Littlewood, and Pablo Seleson. Peridynamic theory of solid mechanics: Modeling, computation, and applications. Short Course, 13th World Congress on Computational Mechanics, New York, New York, 2018.

5. John T. Foster, David J. Littlewood, and Pablo Seleson. Peridynamic theory of solid mechanics: Modeling, computation, and applications. Short Course, 18th World Congress for Theoretical and Applied Mechanics, Rosemont, Illinois, 2017.

4. John T. Foster, David J. Littlewood, and Pablo Seleson. Peridynamic theory of solid mechanics: Modeling, computation, and applications. Short Course, 14th U.S. National Congress on Computational Mechanics, Montreal, Canada, 2017.

3. David J. Littlewood. The Peridigm peridynamics code. Short Course, University of Arizona, Tucson, Arizona, 2017.

2. David J. Littlewood. Engineering dynamics. Rensselaer Polytechnic Institute, Troy, New York, Spring Semester, 2006.

1. David J. Littlewood. Design and analysis of structures. Syracuse University, Syracuse, New York, Spring Semester, 2003.

MINISYMPOSIA ORGANIZED

2. Fei Han, Pablo Seleson, Gilles Lubineau, David J. Littlewood, and Youn Doh Ha. Nonlocal theories and multiscale methods for complex material behavior. World Congress on Computational Mechanics, Seoul, Korea, 2016.

1. David J. Littlewood, Michael L. Parks, James W. Foulk, and Alejandro Mota. Recent advances in nonlocal computational mechanics. 11th U.S. National Congress on Computational Mechanics, Minneapolis, Minnesota, 2011.

STUDENTS MENTORED

6. Ann Sun. University of Texas, Austin. Summer intern, Sandia National Laboratories, Albuquerque, New Mexico, 2019.

5. J. Antonio Perez. Albuquerque Academy High School and University of New Mexico. Year-round intern, Sandia National Laboratories, Albuquerque, New Mexico, 2016-2019.

4. Marco Pasetto. Ph.D. candidate, University of California, San Diego. Summer intern, Sandia National Laboratories, Albuquerque, New Mexico, 2016.

3. Timothy B. Costa. Ph.D. candidate, Oregon State University. Year-round intern, Sandia National Laboratories, Albuquerque, New Mexico, 2015-2016.

2. Nicolas Morales. Ph.D. candidate, University of North Carolina, Chapel Hill. Summer intern, Sandia National Laboratories, Albuquerque, New Mexico, 2015.

1. Canio Hoffarth. Ph.D. candidate, Arizona State University. Summer intern, Sandia National Laboratories, Albuquerque, New Mexico, 2012.

JOURNAL REFEREE

Acta Materialia

Computer Methods in Applied Mechanics and Engineering

Journal of Peridynamics and Nonlocal Modeling

Geomechanics for Energy and the Environment

International Journal for Numerical Methods in Engineering

International Journal for Multiscale Computational Engineering

International Journal of Fatigue

International Journal of Plasticity

International Journal of Solids and Structures

Journal of Applied Mechanics