CURRICULUM VITAE:
John A. Moore

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Academic Background

Ph.D. Mechanical Engineering, Northwestern University, 2015
Dissertation Title: A micromechanics-based method for multiscale fatigue prediction
Committee: Wing Kam Liu, Gregory Olson, and Jianmin Qu

M.S.E. (Civil Engineering) University of Washington, 2007
Thesis Title: Extension of the material point method for modeling interaction of distinct phases in porous continua
Committee: Peter Mackenzie-Helnwein, Pedro Arduino, and Gregory Miller

B.S. Aeronautical and Astronautical Engineering, University of Washington, 2005

Professional History

Assistant Professor, Marquette University, 2018 - present

Staff Computational Scientist/Engineer, Lawrence Livermore National Laboratory, 2017-2018

Postdoctoral Research Staff, Lawrence Livermore National Laboratory, 2015-2017

Structural Analysis Engineer, Aerojet (currently Aerojet Rocketdyne), 2009 - 2010

Structural Analysis Associate Engineer, Aerojet, 2007 - 2009

Structural Engineering Intern, D'Amato Conversano Inc. Engineers, 2006

Journal Publications

Please see a complete and updated list of publications on Google Scholar:
https://scholar.google.com/citations?user=c6mdEsIAAAAJ&hl=en

JA Moore, S.F. Li, M. Rhee, and N.R. Barton. Modeling the effects of grain and porosity structure on copper spall response. Journal Dynamic Behavior of Materials 2018; 4(4), 464-480.

Moore, JA. A degradation function consistent with Cocks–Ashby porosity kinetics. International Journal of Fracture. 2018; 209, no. 1-2: 231-234.

Moore, JA., Barton, N. R., Florando, J., Mulay, R., Kumar, M. Crystal plasticity modeling of β phase deformation in Ti-6Al-4V. Modelling and Simulation in Materials Science and Engineering. 2017; Oct 1;25(7).

Moore JA, Frankel D, Prasannavenkatesan R, Domel AG, Olson GB, Liu WK. A crystal plasticity-based study of the relationship between microstructure and ultra-high-cycle fatigue life in nickel titanium alloys. International Journal of Fatigue. 2016; 91:183-94.

Mulay RP, Moore JA, Florando JN, Barton NR, Kumar M. Microstructure and mechanical properties of Ti–6Al–4V: Mill-annealed versus direct metal laser melted alloys. Materials Science and Engineering: A. 2016; 666:43-7.

Liu Z, Moore JA, Liu WK. An extended micromechanics method for probing interphase properties in polymer nanocomposites. Journal of the Mechanics and Physics of Solids. 2016; May 3; 95: 663-680.

Boyce BL, Kramer SL, Bosiljevac TR, Corona E, Moore JA, Elkhodary K, et al. The second Sandia fracture challenge: predictions of ductile failure under quasi-static and moderate-rate dynamic loading. International Journal of Fracture. 2016; 198(1-2):5-100.

Liu Z, Moore JA, Aldousari SM, Hedia HS, Asiri SA, Liu WK. A statistical descriptor based volume-integral micromechanics model of heterogeneous material with arbitrary inclusion shape. Computational Mechanics. 2015; 55(5):963-81.

Moore JA, Li Y, O'Connor DT, Stroberg W, Liu WK. Advancements in multiresolution analysis. International Journal for Numerical Methods in Engineering. 2015;102(3-4):784-807.

Moore JA, Ma R, Domel AG, Liu WK. An efficient multiscale model of damping properties for filled elastomers with complex microstructures. Composites Part B: Engineering. 2014; 62:262-70.

Mackenzie-Helnwein P, Arduino P, Shin W, Moore JA, Miller GR. Modeling strategies for multiphase drag interactions using the material point method. International Journal for Numerical Methods in Engineering. 2010; 83(3):295-322.

McCarthy MP, Hernandez G, Mactutis A, Moore JA. Validation of an 8-14 μm cloud monitor using visual observations of Antarctic cloud cover. Applied Optics. 2007 Apr 10;46(11):2091-8.

Conference and Workshop Presentations

JA Moore, NR Barton. A Cocks-Ashby based formulation for incorporating sub-scale variations in rate sensitivity into porosity modeling, *XIV International Conference on Computational Plasticity*, Barcelona Spain, September 2017.

JA Moore, NR Barton, JN Florando, RP Mulay, M Kumar. Microscale modeling of Ti–6Al–4V's response and failure, *Materials Science and Technology 2016: Technical Meeting and Exhibition*, Salt Lake City Utah, October 2016.

M Messner, JA Moore, NR Barton. Homogenized dynamics of lattice-structured meta-materials, *8th Multiscale Materials Modeling International Conference*, Dijon France, October 2016.

JA Moore, WK Liu. A micromechanics-based method for multiscale fatigue prediction, *Steel Research Group 31st Annual Meeting*, Evanston, IL, March 2015.

JA Moore, MA Bessa and WK Liu. A computational constitutive law for Multiscale Fatigue Predictions, *11th World Congress on Computational Mechanics*, Barcelona Spain, July 2014.

JA Moore, WK Liu. Archetype-blending multiscale continuum method, *Steel Research Group 30th Annual Meeting*, Evanston, IL, March 2014.

JA Moore, WK Liu. Archetype-blending continuum theory for multiscale fatigue predictions, *Center for Surface Engineering and Tribology*, Evanston, IL, November 2013.

JA Moore, WK Liu. Computational fatigue prediction in titanium nickel superelastic alloys, *Steel Research Group 29th Annual Meeting*, Evanston, IL, March 2013.

JA Moore, KI Elkhodary, WK Liu. Application of archetype multiresolution theory to ceramic materials, *Society of Engineering Science 2011 Annual Technical Conference*, Evanston, IL, October 2011.

JA Moore, S Tang, WK Liu. Multiscale modeling of polymer/nanodiamond composites: property prediction, *11th US National Congress on Computational Mechanics,* Minneapolis, MN, July 2011.

P Mackenzie-Helnwein, P Arduino, JA Moore, WK. Shin, and GR Miller. Modeling interaction of phases in mixtures using a multi-field material point method," *9th US National Congress on Computational Mechanics*, San Francisco, July 2007.

Funded Research

Determining the Driving Force for Fatigue Crack Nucleation in a Superelastic Nickel Titanium Alloy. Sponsor/Agency: NSF: CMMI. Amount Requested $ 448,025. Performance Dates: 2019-2022 Status: current (PI 50% effort).

Additively-Manufactured Motor with Integrated Cooling and Distributed Power Electronic. Sponsor/Agency: Marquette University: GHR Seed Grant. Amount Requested $ 75,000. Performance Dates: 2019-2020 Status: current (co-PI 25% effort).

Bridging the Material Modeling Gap Between Research and Design. Sponsor/Agency: Marquette University: Summer Faculty Fellowship/Regular Research Grant. Amount Requested $8,500. Performance Dates: 2019-2020 Status: current (PI 100% effort).

Connecting Experiments and Simulations while Designing Functionality into the Dynamic Behavior of Surrogate Energetic Systems. Sponsor/Agency: AFOSR, AFOSR Grant: 06-01430-72331. Amount Requested: $1,502,289 Performance Dates: 2018-2023 Status: current (co-PI 7% effort).

Teaching

Instructor: MEEN 4995 Special Topic: Finite Element Modeling of Lattice Materials, Marquette University, Spring 2019

Instructor: MEEN 3260 Numerical Methods for Mechanical Systems, Marquette University, Fall 2018

Joint Instructor: CEE 426-II Advanced Finite Element II, Northwestern University, Spring 2013 & 2014

Teaching Assistant: CEE 327 Finite Element Methods in Mechanics, Northwestern University, Fall 2011

Teaching Assistant: CEE 220 Mechanics of Materials, University of Washington, Spring 2006

Committees/Service

Member: Marquette University Mechanical Engineering Department graduate committee 2018 – present

Marquette University Mechanical Engineering senior design mentor. Project: SAE Baja Eagle 3 Gearbox 2018-2019

Awards

United States Association for Computational Mechanics Travel Award, 2014

Predictive Science and Engineering Design Fellowship, Northwestern University, 2011-2012

Graduate School Conference Travel Grant, Northwestern University, 2011, 2014

Walter P. Murphy Fellowship, Northwestern University, 2010

Professional Society Membership

American Society of Mechanical Engineers

License

Engineer in Training: State of Washington, June 2009, Certification Number 29798

Website

https://www.eng.mu.edu/cmml/