Leslie Dewan
ldewan@transatomicpower.com
One Broadway, 14th Floor 1 (617) 470 - 3847
Cambridge, MA 02142

Education

Massachusetts Institute of Technology
Ph.D. in Nuclear Science and Engineering, June 2013

Dissertation title: Molecular dynamics simulation and topological analysis of the network structure of actinide-bearing materials

Massachusetts Institute of Technology
Bachelor of Science in Nuclear Science and Engineering, June 2007
Bachelor of Science in Mechanical Engineering, June 2007

Experience

Transatomic Power
Cambridge, MA
Cofounder, Chief Executive Officer: June 2010 – present

- Leading the commercialization and materials design of Transatomic Power's molten salt fueled reactor, which safely generates low-cost electricity with greatly reduced waste.

Vecna Technologies
Cambridge, MA
Robotics Engineer: September 2007 – May 2008
Nuclear Engineering Consultant: June 2008 – September 2008

- Mechanical design, development, and manufacture of the BEAR, a 6.5 foot tall hydraulically actuated humanoid robot capable of dynamic balancing on two legs.
- Developed a proof-of-concept device that used laser-induced breakdown spectroscopy for field identification of chemical and nuclear weapons.

Center for Materials Research and Ethnography, MIT
Cambridge, MA
Principal researcher modeling mechanics of prehistoric watercraft: June 2004 – June 2010

- Designed and implemented software to model stress patterns, size limits, cargo capacity, and aerodynamic and hydrodynamic characteristics to evaluate sailing ability in various weather conditions and ocean currents.
- Led team of thirty to design and build a replica vessel (five meters in length) to empirically test sail efficiencies and steering mechanisms.

Awards

World Economic Forum Young Global Leader, March 2016. **National Geographic Emerging Explorer**, June 2015. **TIME Magazine 30 Under 30**, December 2013. **MIT Technology Review 35 Innovators Under 35**, September 2013. **Forbes 30 Under 30, Energy**, December 2012. **Department of Energy Computational Science Graduate Fellowship**, 2010 - 2013. Named an **MIT Presidential Fellow**, 2008-2009. Undergraduate research was supported by the **Paul E. Gray Fellowship**, MIT. Awarded first place in the 2007 **American Nuclear Society Undergraduate Student Design Competition** for "Design for a Compact Neutron Interferometer."

Skills

Computer Software: SolidWorks, SolidEdge, AutoCAD, Ansys, Ricardo WAVE, Matlab, LabVIEW, Metrowerks CodeWarrior, Eclipse, LaTeX, GULP, DL POLY, LAMMPS, VASP
Programming Languages: C, C++, Java, Python, Fortran.
Machine Tools: Lathe, Milling machine, OMAX Waterjet, Plasma cutter

Publications and Patents

- Prediction of the thermophysical properties of molten salt fast reactor fuel from first-principles. Molecular Physics, March 2014.
- Molecular Dynamics Simulation of the Thermodynamic and Transport Properties of the Molten Salt Fast Reactor Fuel LiF–ThF_4. Journal of Nuclear Materials, March 2013 (first author).
- Molecular Dynamics Simulation of Structure and Transport Properties of Molten LiF-ThF_4. Transactions of the American Nuclear Society Winter Meeting, November 2012.
- Topological Analysis of the Structure of Self-Irradiated Sodium Borosilicate Glass. Journal of Non-Crystalline Solids, May 2012 (first author).
- Modeling Radiation-Induced Alteration of the Network Topology of Alkali Borosilicate High-Level Waste Glass. International Conference on the Chemistry of Glasses and Glass-Forming Melts, September 2011.
- Nuclear reactors and related methods and apparatus. US 20130083878 A1. Filing date: 3 October 2011
- Ancient Maritime Trade Between Ecuador and Western Mexico on Balsa Rafts: An Engineering Analysis of Balsa Raft Functionality and Design. Journal of Anthropological Research, March 2008 (first author).

Selected Conference Presentations, Public Talks, and Congressional Testimony

- Save the World with New Nuclear Reactors. National Geographic Explorers Symposium, Washington, D.C. June 2015.
- Nuclear Energy Technology Innovation: The Road Ahead. Industry's Opportunities, Challenges, and Needs for Advanced Nuclear Technologies. The White House, Washington, D.C. June 2015.
- The Future of Nuclear Energy. US House of Representatives Committee on Science, Space, and Technology, Energy Subcommittee, Washington, D.C. December 2014.
- Innovations in Electricity Generation. The Atlantic's Global Innovation Summit, Abu Dhabi, UAE. November 2014.
- Our Friend the Atom. Google's Solve for X, San Martin, CA. February 2014.
- Topological Modeling of Radiation-Induced Structural Alterations of Amorphous and Amorphizable Solids for Nuclear Waste Applications. The 19th University Conference on Glass Science: Glasses for Energy, August 2011.
- Topological Exploration of Structure and Defects in Amorphous and Amorphizing Solids. University of Michigan Colloquium, February 2011.
- Modeling Radiation-Induced Alteration of the Network Structure of Alkali Borosilicate High-level Waste Glass. Materials Research Society Fall Meeting, December 2010.
- Radiation-Induced Alteration of Network Structure in Sodium Borosilicate Glass. American Nuclear Society Winter Meeting, November 2010.
- Atomistic Simulations of Radiation Damage Resistance in Network Glasses. Proceedings of Innovative Materials Immune to Radiation, August 2010.
- Modeling Alteration of Borosilicate High-level Waste Glass Networks in a Radiation Environment. American Ceramic Society Glass and Optical Materials Division Spring Meeting, May 2010.
- Design for a Compact Neutron Interferometer. American Nuclear Society Winter Meeting, November 2007.

Professional Societies and Board Memberships

American Nuclear Society
Materials Research Society
Member of MIT's Board of Trustees