James (Jake) Blanchard

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Education:

- Ph.D. in Nuclear Engineering, UCLA (1988)
- M.S. in Engineering, UCLA (1983)
- B.S. in Mechanical Engineering, UCLA (1982)

Professional History:

- Executive Associate Dean, College of Engineering, UW-Madison, July 2014-present
- Chair of Engineering Physics, UW-Madison, July 2011-February 2015
- Professor of Engineering Physics, UW-Madison, 2002-present
- Director of Computer Aided Engineering, UW-Madison, 1997-2002
- Associate Professor of Nuclear Engineering and Engineering Physics, UW-Madison, 1994-2002
- Assistant Professor of Nuclear Engineering and Engineering Physics, UW-Madison, 1988-1994

Research Interests:

Mechanics and failure of inertial and magnetic fusion reactor components; radioisotope power sources; laser-induced stresses and elastic waves in solids; finite element analysis of thermal, stress, strain, and electromagnetic fields; ferromagnetic and disruption loads in fusion reactors.

Honors and Awards:

- Duane H. and Dorothy M. Bluemke Professor of Engineering, 2014
- College of Engineering Harvey Spangler Award, 2008
- UW Distinguished Teaching Award, 2002
- UW Underkoffler Award Nomination, 2001
- Polygon Outstanding Teacher Award, 1995, 1996, 1997
- Fellow of UW Teaching Academy, 1995
- Presidential Young Investigator Award (NSF), 1990
- Outstanding PhD Award, UCLA School of Engineering, 1988

Professional Society Service, Review Panels, Editorships:

- ANS Fusion Energy Division Executive Committee, 1999-2005 (Chair in 2004)
- ANS Fusion Energy Division Program Chair, 2005-2009
- FESAC Panel Materials Science & Technology Subcommittee, October 2011-March 2012

Ten Relevant Publications

1. HH Toudeshki et al, "ARIES ACT-1 Vacuum Vessel Design and Disruption Analysis," Fus Sci Tech, 68, 2015, 535.
2. CE Kessel et al, "The Fusion Nuclear Science Facility, the Critical Step in the Pathway to Fusion Energy," Fus Sci Tech, 68, 2015, 225.

3. JP Blanchard and CJ Martin, “Thermomechanical Analysis for an All-Tungsten ARIES Divertor,” Fus Sci Tech, 67, 2015, 158.
4. CE Kessel, MS Tillack, JP Blanchard, “The Evaluation of the Heat Loading from Steady, Transient and Off-Normal Conditions in ARIES Power Plants,” Fus Sci Tech, 64, 2013, 440.
5. JP Blanchard and CJ Martin, “Fracture and Creep in an All-Tungsten Divertor for ARIES,” Fus Sci Tech, 64, 2013, 435.
6. JP Blanchard, CJ Martin, M Tillack, and X. Wang, “Ratcheting Models for Fusion Component Design,” Fus Sci Tech, 60, 2011, 313-317.
7. S. Sharafat, G.R. Odette, and J. Blanchard, “Materials and Design Interface,” J Nuc Mat, 386, 2009, 896.
8. J. Blanchard and R. Raffray, “Laser Fusion Chamber Design,” Fus Sci Tech, 52, 2007, 440.
9. J. Conzen and J. Blanchard, “An Upper Bound For Stress Waves Induced By Volumetric Heating In IFE Chamber Walls,” Fus Sci Tech, 52, 2007, 506.
10. James P. Blanchard and Carl J. Martin, “Thermomechanical effects in a laser IFE first wall,” J Nuc Mat, 347 (3), 2005, 192-206.

Synergistic Activities

1. Part of DOE NE IRP team for project on Transient Testing in Fission Reactors
2. Designing power sources for dry cask storage instrumentation

Potential Conflicts of Interest

N. Ghoniem, S. Sharafat, A. Aoyama, Q. Hu (UCLA)
A. Lal (Cornell)
J. Latkowski (LLNL)
F. Najmabadi, M. Tillack, X. Wang (UCSD)
R. Raffray (ITER)
John Sethian (NRL)
L. Snead, S. Zinkle (ORNL)
Chuck Kessel (PPPL)

Recent Graduate Students

J. Conzen – Fauske and Associates
A. Nosek – Nuclear Regulatory Commission
Andrew Nelson – Oak Ridge National Laboratory
Rui Yao – Rush University Medical Center
Jeff Crowell – Lawrence Livermore National Laboratory