

Devin R. Berg

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Professional Interests

Experiential learning in engineering education.
International Engineering Development/Global Engineering
Design and fabrication of medical devices.
Bio-inspired engineering and design.
Additive manufacturing.

Education

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| 2013 | PhD Mechanical Engineering , University of Minnesota - Twin Cities |
| 2011 | MS Mechanical Engineering , University of Minnesota - Twin Cities Minor: Biomedical Engineering |
| 2008 | BS Mechanical Engineering , University of Wisconsin - Madison |

Academic Positions

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| 2014–present | Program Director , Manufacturing Engineering, University of Wisconsin - Stout |
| 2012–present | Assistant Professor , University of Wisconsin - Stout |
| 2012 | Adjunct Faculty , University of St. Thomas |
| 2011–2012 | Lab Supervisor , Medical Devices Center |
| 2010–2012 | Teaching Assistant , University of Minnesota - Twin Cities |
| 2008–2012 | Graduate Research Assistant , University of Minnesota - Twin Cities |

Peer-Reviewed Journal Articles

- 2010 Z. G. Liu, D. R. Berg, V. N. Vasys, M. E. Dettmann, B. Zielinska, and J. J. Schauer. Analysis of C1, C2, and C10 through C33 particle-phase and semi-volatile organic compound emissions from heavy-duty diesel engines. *Atmospheric Environment*, 44(8):1108–1115, 2010
- 2009 Z. G. Liu, D. R. Berg, T. A. Swor, J. J. Schauer, and B. Zielinska. A study on the emissions of chemical species from heavy-duty diesel engines and the effects of modern aftertreatment technology. *SAE Technical Paper Series 2009-01-1084*, 2009
- 2009 J. Schmidt, D. R. Berg, L. Ploeg, and H. L. Ploeg. Precision, repeatability and accuracy of optotrak optical motion tracking systems. *International Journal of Experimental and Computational Biomechanics*, 1(1):114–127, 2009
- 2008 Z. G. Liu, D. R. Berg, and J. J. Schauer. Effects of a zeolite-selective catalytic reduction system on comprehensive emissions from a heavy-duty diesel engine. *Journal of the Air & Waste Management Association*, 58(10), 2008
- 2008 Z. G. Liu, D. R. Berg, T. A. Swor, and J. J. Schauer. Comparative analysis on the effects of diesel particulate filter and selective catalytic reduction systems on a wide spectrum of chemical species emissions. *Environmental Science and Technology*, 42(16):6080–6085, 2008
- 2008 Z. G. Liu, D. R. Berg, and J. J. Schauer. An analysis of methods for measuring particulate matter mass emissions. *SAE Technical Paper Series 2008-01-1748*, 2008
- 2008 Z. G. Liu, D. R. Berg, and J. J. Schauer. Detailed effects of a diesel particulate filter on the reduction of chemical species emissions. *SAE Technical Paper Series 2008-01-0333*, 2008

Invited Talks

- 2014 D. R. Berg. HandsOnMechanics.org: A repository for demonstrations and other resources to promote best practices in the mechanics classroom. In *Proceedings of the 2014 ASEE Annual Conference*, Indianapolis, IN, 2014. ASEE
- 2013 D. R. Berg. Surgical robotics under fluid power. In *Proceedings of the 2013 Design of Medical Devices Conference*, Minneapolis, MN, 2013. ASME
- 2012 D. R. Berg, P. Y. Li, and A. G. Erdman. Achieving dexterous manipulation for minimally invasive surgical robots through the use of hydraulics. In *Proceedings of the 2012 ASME Dynamic Systems and Control Conference*, Fort Lauderdale, FL, 2012. ASME. (Best Paper in Session)
- 2010 D. R. Berg, P. Y. Li, A. G. Erdman, T. Cui, and T. P. Kinney. Robotic, multi-articulated endoscopic surgical tools for natural orifice transluminal endoscopic surgery. In *Doctoral Consortium for Medical Simulation and Robotics, American College of Surgeons Accredited Education Institutes Consortium*, Chicago, IL, 2010

Peer-Reviewed Conference Proceedings

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| 2014 | D. R. Berg. Evaluation of student learning outcomes due to self-guided engineering analysis of surroundings. In <i>Proceedings of the 2014 ASEE Annual Conference</i> , Indianapolis, IN, 2014. ASEE. Mechanics Division Best Paper Award |
| 2013 | D. R. Berg. Experiences with inquiry-based learning in an introductory mechanics course. In <i>Proceedings of the 2013 ASEE North Midwest Section Conference</i> , pages 318–324, Fargo, ND, 2013. ASEE |
| 2013 | F. Capaldi and D. R. Berg. Outcomes of using an infinitely explorable online learning system. In <i>Proceedings of the 2013 ASEE Annual Conference</i> , Atlanta, GA, 2013. ASEE |
| 2012 | D. R. Berg, L. A. Harder, and A. G. Erdman. Generating interest in technology and medical devices through an interactive educational game. In <i>Proceedings of the 2012 ASEE Annual Conference</i> , San Antonio, TX, 2012. ASEE |
| 2011 | D. R. Berg, T. P. Kinney, P. Y. Li, and A. G. Erdman. Determination of surgical robot tool force requirements through tissue manipulation and suture force measurement. In <i>Proceedings of the 2011 Design of Medical Devices Conference</i> , Minneapolis, MN, 2011. ASME |
| 2011 | D. R. Berg, A. Carlson, W. K. Durfee, R. M. Sweet, and T. Reihlsen. Low-cost, take-home, beating heart simulator for health-care education. In <i>Proceedings of Medicine Meets Virtual Reality 18</i> , Newport Beach, CA, 2011 |

Poster Presentations

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| 2010 | D. R. Berg, P. Y. Li, A. G. Erdman, T. Cui, and T. P. Kinney. The application of fluid power to meet the needs of surgical robotics. Minneapolis, MN, 2010. LifeScience Alley Conference & Expo |
| 2010 | D. R. Berg, P. Y. Li, A. G. Erdman, T. Cui, and T. P. Kinney. The application of fluid power to meet the needs of surgical robotics. Seattle, WA, 2010. North American Summer School in Surgical Robotics and Simulation |
| 2009 | D. R. Berg, P. Y. Li, A. G. Erdman, T. Cui, and T. P. Kinney. Robotic Multi-Articulated Surgical Tools for NOTES. Minneapolis, MN, 2009. Institute for Engineering in Medicine Innovation Showcase |

Honors and Awards

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| 2008–2012 | 3M Science and Technology Fellowship |
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Grants - Awarded

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| 2014 | D. R. Berg and W. Stary. STEPS for Girls and FIRST LEGO League Competition at the University of Wisconsin-Stout. Xcel Energy Foundation, 2014. Amount Awarded: \$8,000 |
| 2013 | D. R. Berg. Professional Development: Presentation at the 2014 American Society for Engineering Education Annual Conference. University of Wisconsin - Stout, 2013. Amount Awarded: \$1,550 |
| 2013 | D. R. Berg. Initiation Grant: Design and Control of a Desktop Laser Welder Positioning System. University of Wisconsin - Stout Discovery Center, 2013. Amount Awarded: \$15,834 |

Grants - Submitted, Not Awarded

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| 2014 | D. R. Berg. Professional Development: Presentation at the 2015 American Society for Engineering Education Annual Conference. University of Wisconsin - Stout, 2014. Amount Requested: \$2,043 (pending) |
| 2014 | F. M. Capaldi and D. R. Berg. An Intelligent Infinitely Explorable Online Learning Environment (Re-Submission. National Science Foundation - STTR Phase I, 2014. Amount Requested: \$223,734 (pending) |
| 2014 | D. R. Berg and F. M. Capaldi. Using Advanced Educational Software for Automated Credentialing. National Science Foundation - REE, 2014. Amount Requested: \$110,859 |
| 2013 | F. M. Capaldi and D. R. Berg. An Intelligent Infinitely Explorable Online Learning Environment. National Science Foundation - STTR Phase I, 2013. Amount Requested: \$223,734 |
| 2013 | D. R. Berg. Application for Taft Manufacturing Engineering Professorship. University of Wisconsin - Stout, 2013. Amount Requested: \$25,325 |
| 2013 | M. Veletzos, D. R. Berg, and F. M. Capaldi. Expanding an Online Engineering Learning Environment to a Diverse Population of Learners. National Science Foundation - TUES, 2013. Amount Requested: \$599,282 |
| 2012 | D. R. Berg. Professional Development: Evaluation and Presentation of an Infinitely Explorable Online Learning System. University of Wisconsin - Stout, 2012. Amount Requested: \$3,094 |

Service to the Field

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| 2014–present | Associate Editor: Directory of Open Access Journals, http://doaj.org/ |
| 2014 | Session Moderator: ASEE Annual Conference |
| 2014 | Reviewer: International Conference on Transformations in Engineering Education |
| 2014–present | Reviewer: Soft Robotics, Mary Ann Liebert Inc. Publishers |
| 2013–present | Trustee: handsonmechanics.org (ASEE Mechanics Division) |
| 2013–present | Director: ASEE Mechanics Division Executive Committee |
| 2013–present | Reviewer: ASEE Annual Conference |
| 2012–2013 | Reviewer: ASME Dynamic Systems and Control Conference |

Service to the University of Wisconsin - Stout

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| 2014–present | Member: Educational Activities Committee |
| 2013–present | Alternate: Graduate Education Committee |
| 2013–present | Advisor: Engineers Without Borders UW-Stout Chapter |
| 2013–present | Advisor: Baja SAE UW-Stout Chapter |
| 2013–present | Member: Graduate Faculty |
| 2013–present | Campus Representative: American Society for Engineering Education |
| 2013–present | Tournament Director: FIRST LEGO League Regional Tournament |
| 2013–2014 | Advisor: UW-Stout Rocketry Club |

Service to the Engineering and Technology Department

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| 2014–2015 | Search and Screen Committee (3 engineering faculty positions), member |
| 2013–present | MS Manufacturing Engineering Advisory Board, member |
| 2012–present | BS Manufacturing Engineering Advisory Board, member |
| 2012–present | Bylaws Revision Committee, member |

Undergraduate Student Projects Advised

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| 2014 | “Design for Manufacturing of Hydroelectric Generator for Rural Malawi” (Mandela Washington Fellowship for Young African Leaders) |
| 2014 | “Snow Chair: A Device for Achieving Wheelchair Traction in Slippery Conditions” |
| 2014 | “Snow Sock: A Device for Achieving Wheelchair Traction in Slippery Conditions” (provisional patent) |
| 2014 | “An Add-On to Provide Automated Coffee Grinding to a Manual Burr Grinder” |
| 2013–2014 | “Design of a GUI and Positioning Control System for a Desktop Laser Welder” |
| 2013 | “Laser Welding Process Characterization” |

Professional Development Activities

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| 2014 | EWB-USA/ASCE Global Leadership Program: Design Global, Engineer Local |
| 2014 | OPID Faculty College |
| 2014–present | NTLC Teaching Champions Program |
| 2014 | University Teaching 101, Johns Hopkins University, course completed |
| 2014 | Heart and Soul of Teaching Workshop, Nakatani Teaching and Learning Center |
| 2013 | Writing in the Sciences, Stanford University, course completed with distinction |
| 2012–2013 | First Year Faculty Program |
| 2012 | Attendance at 2012 ASEE North Midwest Section Conference |
| 2012 | New Instructor Workshop |

Affiliations

Engineers Without Borders - USA
American Society for Engineering Education
American Society of Mechanical Engineers
Pi Tau Sigma (Honorary Mechanical Engineering Society)
Tau Beta Pi (Honorary Engineering Society)

Updated: 19 November 2014