

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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|--------------|--|
| 2016–present | Associate Professor , University of Wisconsin - Stout |
| 2015–present | Program Director , Mechanical Engineering, University of Wisconsin - Stout |
| 2016 | Visiting Professor , University of Applied Sciences - Upper Austria |
| 2014–2016 | Program Director , Manufacturing Engineering, University of Wisconsin - Stout |
| 2012–2016 | Assistant Professor , University of Wisconsin - Stout |
| 2015 | Research Scholar , Discovery Center, 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

- 2017 J. Dekarske and D. R. Berg. Path oriented powered wheelchair navigation assistance. *The Journal of Open Engineering*, 2017. under review
- 2016 D. R. Berg, T. Lee, and E. Buchanan. A methodology for exploring, documenting, and improving humanitarian service learning in the university. *Journal of Humanitarian Engineering*, 2016
- 2015 D. R. Berg. Twitter in the engineering classroom. *Journal of Online Engineering Education*, 6(2), 2015
- 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

- 2015 | D. R. Berg and A. Roush. Engineering to Help. Keynote address: Smart Girls Rock!, Menomonie Middle School, 2015
- 2015 | D. R. Berg. Engineers Without Borders USA at UW-Stout. Menomonie Rotary and Menomonie Sunrise Rotary, 2015
- 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

- 2017 T. Lacksonen, S. Springer, and D.R. Berg. Global engineering projects from the young african leaders initiative. In *Proceedings of the 2017 ASEE Annual Conference*, Columbus, OH, 2017. ASEE. under review
- 2017 T. Lee, D. R. Berg, and E. Buchanan. Exploring, documenting, and improving humanitarian service learning through engineers without borders usa. In *Proceedings of the 2017 ASEE Annual Conference*, Columbus, OH, 2017. ASEE. under review
- 2017 D.R. Berg and M. Wigdahl. Work in progress: Assistive technology for freshmen design and k-12 outreach. In *Proceedings of the 2017 ASEE Annual Conference*, Columbus, OH, 2017. ASEE. under review
- 2016 D. R. Berg and T. Lee. Incorporation of liberal education into the engineering curriculum at a polytechnic. In *Proceedings of the 2016 ASEE Annual Conference*, New Orleans, LA, 2016. ASEE
- 2015 D. R. Berg. Use of a rube goldberg design project for engineering dynamics. In *Proceedings of the 2015 ASEE Annual Conference*, Seattle, WA, 2015. ASEE
- 2015 D. R. Berg. The relationship between class size and active twitter participation in the engineering classroom. In *Proceedings of the 2015 ASEE Annual Conference*, Seattle, WA, 2015. ASEE
- 2014 D. R. Berg. Evaluation of student learning outcomes due to self-guided engineering analysis of surroundings. In *Proceedings of the 2014 ASEE Annual Conference*, Indianapolis, IN, 2014. ASEE. Mechanics Division Best Paper Award
- 2013 D. R. Berg. Experiences with inquiry-based learning in an introductory mechanics course. In *Proceedings of the 2013 ASEE North Midwest Section Conference*, pages 318–324, Fargo, ND, 2013. ASEE
- 2013 F. Capaldi and D. R. Berg. Outcomes of using an infinitely explorable online learning system. In *Proceedings of the 2013 ASEE Annual Conference*, 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 *Proceedings of the 2012 ASEE Annual Conference*, 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 *Proceedings of the 2011 Design of Medical Devices Conference*, 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 *Proceedings of Medicine Meets Virtual Reality 18*, Newport Beach, CA, 2011

Poster Presentations

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| 2016 | J. Dekarske and D. R. Berg. Path oriented powered wheelchair navigation assistance. In <i>Proceedings of the 2016 BMES Annual Meeting</i> , Minneapolis, MN, 2016. Biomedical Engineering Society |
| 2016 | W.V. Shi, D.R. Berg, C. Liu, and C. Anderson. Robotics REU in undergraduate engineering research. Menomonie, WI, 2016. Stout Summit |
| 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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| 2016 | UW-Stout Diversity Award (Team Category) |
| 2016 | Discovery Center Collaborator of the Year |
| 2014 | ASEE Mechanics Division Best Paper Award |
| 2008–2012 | 3M Science and Technology Fellowship |

Grants - Awarded

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| 2017 | D. R. Berg. College Collaboration: Assistive Technology as a Freshmen Design Experience. University of Wisconsin - Stout, 2017. Amount Awarded: \$2,000 |
| 2015 | W. V. Shi, C. A. Anderson, D. R. Berg, and C. C. Liu. REU Site: Interdisciplinary Research Experiences in Robotics for Assitive Technology. National Science Foundation - Research Experiences for Undergraduates, 2015. Amount Awarded: \$230,400 |
| 2015 | D. R. Berg. Professional Development: Presentation at the 2016 American Society for Engineering Education Annual Conference. University of Wisconsin - Stout, 2015. Amount Awarded: \$1,500 |
| 2015 | E. Buchanan, D. R. Berg, and T. Lee. Exploring, Documenting, and Improving Humanitarian Service Learning through Engineers Without Borders USA. National Science Foundation - Cultivating Cultures for Ethical STEM, 2015. Amount Awarded: \$454,065 |
| 2015 | W.V. Shi, D. R. Berg, and C.C. Liu. Research Incubator Grant: Development of a NSF REU Proposal in Robotics and Control Systems. University of Wisconsin - Stout, 2015. Amount Awarded: \$10,000 |
| 2014 | D. R. Berg. Professional Development: Presentation at the 2015 American Society for Engineering Education Annual Conference. University of Wisconsin - Stout, 2014. Amount Awarded: \$1,874 |
| 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 Awarded: \$224,802 |
| 2014 | D. R. Berg and W. Stry. 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 |

Service to the Field

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| 2016–present | Member: Center for Open Science Preprint Advisory Group |
| 2016–present | Director: engrXiv, the eprint server for engineering |
| 2016–present | Founding Editor: The Journal of Open Engineering |
| 2016–present | Secretary: Faculty Leadership Council, Engineers Without Borders USA |
| 2013–present | Trustee: handsonmechanics.org (ASEE Mechanics Division) |
| 2013–present | Director: ASEE Mechanics Division Executive Committee |
| 2013–present | Reviewer: ASEE Annual Conference |
| 2014–2016 | 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 | Reviewer: Soft Robotics, Mary Ann Liebert Inc. Publishers |
| 2012–2013 | Reviewer: ASME Dynamic Systems and Control Conference |

Affiliations

Biomedical Engineering Society
Wisconsin/Nicaragua Partners of the Americas
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: 9 February 2017