

# 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

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

## Academic Positions

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

- 2015 D. R. Berg. Engineers without borders usa at uw-stout. In *Menomonie Rotary and Menomonie Sunrise Rotary*, Menomonie, WI, 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

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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. Reihsen. 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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|-----------|------------------------------------------|
| 2014      | ASEE Mechanics Division Best Paper Award |
| 2008–2012 | 3M Science and Technology Fellowship     |

## Grants - Awarded

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. Sary. 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

2014–present	Associate Editor: Directory of Open Access Journals, <a href="http://doaj.org/">http://doaj.org/</a>
2014	Session Moderator: ASEE Annual Conference
2014	Reviewer: International Conference on Transformations in Engineering Education
2014	Reviewer: Soft Robotics, Mary Ann Liebert Inc. Publishers
2013–present	Trustee: <a href="http://handsonmechanics.org">handsonmechanics.org</a> (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

## 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: 27 March 2015