***Jennifer R. Keshwani, Ph.D.***

Ph.D. Oral Biology and Engineering

B.S., M.S. Biological Systems Engineering

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| **Contact****Information** | 248 L. W. Chase HallUniversity of Nebraska-LincolnLincoln, NE 68583 | Tel: (402) 472-9614 (work)Tel: (402) 304-2396 (cell)Fax: (402) 472-6338E-mail: jmelander7@unl.edu |

**Current** Assistant Professor, Department of Biological Systems Engineering

**Appointment**

**Section 1 Education and Employment History**

**Section 1.1 Education History**

2006-2010: **Interdisciplinary Ph.D.**

 Coordinating Discipline: Oral Biology, Co-Discipline: Engineering

 University of Missouri-Kansas City (UMKC)

 Dissertation title: Evaluation of a Silorane System for use in Stabilization of Traumatic Bone Injuries

 Advisor: Dr. J. David Eick

2003-2005: **Master of Science**

 Agricultural and Biological Systems Engineering

 University of Nebraska-Lincoln (UNL)

 Thesis title: Adaptive Reconstruction of Ultrasonic Signals for Imaging Teeth

 Advisor: Dr. Gregory Bashford

1999-2003: **Bachelor of Science**

 Biological Systems Engineering, emphasis in Biomedical Engineering

 University of Nebraska-Lincoln

**Section 1.2 Employment History**

August 2013 – present **Assistant Professor** (80% Extension, 20% Teaching)

 Department of Biological Systems Engineering, University of Nebraska-Lincoln

August 2012 – July 2013 **Extension Assistant Professor** (75% Extension, 25% Teaching)

 Department of Biological Systems Engineering, University of Nebraska-Lincoln

June 2010-July 2012: **Adjunct Instructor**

School of Computing and Engineering, University of Missouri-Kansas City

June 2010-July 2012: **Postdoctoral Fellow**

Oral Biology Department, University of Missouri-Kansas City

 Research Area: Development of a silorane-based bone cement

 Advisor: Dr. J. David Eick

August 2006-May 2010: **Graduate Research Assistant, I.Ph.D. Program,**

 Oral Biology Department, University of Missouri-Kansas City

 Advisor: Dr. J. David Eick

**Section 2 Research Accomplishments**

**Section 2.1 Publication Record**

Section 2.1.1 Peer Reviewed Publications

*†formally published as J. Melander*

1. Yao X, Carleton SM, Kettle AD, Phillips CL, **Melander JR**, and Wang Y. Gender-dependence of bone structure and properties in adult osteogensis imperfecta murine model. *Annals of Biomedical Engineering.* 2013. 41(6); 1139-1149.
2. Walker MP, Alderman N, Petri C, **Melander J**, and McGuire J. Correlation of impression removal force with elastomeric impression material rigidity and hardness. *J Prosthodont* 2013. 22(5); 362-366.
3. Eick JD, Barragan-Adjemian C, Rosser J, **Melander JR**, Dusevich V, Weiler RA, Miller BD, Kilway KV, Dallas MR, Bi L, Nalvarte EL, and Bonewald LF. Silorane resin supports proliferation, differentiation and mineralization of MLO-A5 bone cells *in vitro* and bone formation *in vivo*. *J Biomedical Materials Research Part B*. 2012. 100B; 850-861.
4. **Melander JR,** Weiler RA, Miller BD, Schuman T, Kilway KV, Day DE, Velez M, and Eick JD. Estimation of properties of a photoinitiated silorane-based composite with potential for orthopaedic applications. *J Biomedical Materials Research Part B*. 2012. 100B(1); 163-169.
5. **Melander JR**, Dunn WP, Link M, Wang Y, Xu C, and Walker MP. Comparison of flexural properties and surface roughness of nanohybrid and microhybrid dental composites. *General Dentistry*. 2011. 59(5). 342-347.
6. Velez M, He Y, Day DE, Schuman TP, Kilway KV, **Melander JR**, Weiler RA, Miller BD, Nalvarte EL, and Eick JD. Processing of yttrium aluminosilicate (YAS) glasses for dental composites. *Ceramica*. 2011. 57(341); 1-9.
7. DiMartino A, Doné K, Judkins T, Morse J, **Melander J**, Oleynikov D, and Hallbeck S. Ergonomic laparoscopic tool handle design. *Human Factors and Ergonomics Society Annual Meeting Proceedings*. 2004. 48(12); 1354-1358.

Section 2.1.2 Peer Reviewed Publications Accepted

None

Section 2.1.3 Peer Reviewed Publications Submitted/In-review

1. Bi L, Kilway KV, **Keshwani JR**, Weiler RA, Rosser JL, Menuey EM, Xie A, Kitase Y, Schuman TP, Eick JD, and Bonewald LF. Development of a Novel, Non-Toxic, Non-Exothermic, Osteogenic Bone Cement. *Nature Biotechnology*. (submitted)

Section 2.1.4 Books and Book Chapters

1. Barker, B., Nugent, G., Grandgenett, N., **Melander, J.**, Nelson, C. A., & Leduc-Mills, B. (In Press) Developing an Elementary Engineering Education Program through Problem-Based Wearable Technologies Activities. Book Chapter, Handbook of Research on Wearable and Mobile Technologies in Education, J. Holland (Ed.), IGI Press.
2. Dusevich VM, **Melander JR**, and Eick JD. (2013). SEM in dental research. In Heide Schatten (Ed.), *Scanning Electron Microscopy for the Life Sciences* (pp 211-235). Cambridge, UK: Cambridge University Press.

Section 2.1.5 Conference Proceedings: Peer Reviewed

1. Keshwani, J & Curtis, E. (2016). Empowering Undergraduate Engineering Students to Connect Laboratory Experiences with Industry Applications through Fictional Clients.
2. **Keshwani, J.**, Barker, B., Nugent, G., & Grandgenett, N. (2016). WearTec: Empowering Youth to Create Wearable Technologies. *In Proceedings of International Conference on Advanced Learning Technologies 2016* (pp. xx-xx).
3. Nugent, G., Barker, B., Grandgenett, N., **Melander, J.** & Nelson, C. (2015). Wearable Technologies to Promote STEM Learning and Attitudes. In *Proceedings of E-Learn: World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2015* (pp. 689-694). Chesapeake, VA: Association for the Advancement of Computing in Education (AACE).
4. Barker, B., **Melander, J.**, Grandgenett, N. & Nugent, G. (2015). Utilizing Wearable Technologies as a Pathway to STEM. In D. Slykhuis & G. Marks (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2015* (pp. 1770-1776). Chesapeake, VA: Association for the Advancement of Computing in Education (AACE).
5. Adams KA, **Keshwani JR.** (2015). Preparing Pre-Service Teachers to Make Connections between Science and Engineering Concepts through Teamwork with Engineering Students. Proceedings of American Society for Engineering Education Annual Conference and Exposition, Seattle, Washington.
6. **Melander JR,** Weiler RA, Miller BD, Kilway KV, and Eick JD. Handling Properties and Exothermicity of Chemically Initiated Silorane Biomaterial. 89th Annual Meeting & Exhibition of the International Association for Dental Research. J Dent Res 90 Spec Issue: 3540, 2011
7. Walker MP, Mitts DA, Shin TP, **Melander JR**, and McDonald SK. Effect of Elastomeric Impression Material Stiffness/Hardness on Impression Removal Difficulty. 89th Annual Meeting & Exhibition of the International Association for Dental Research. J Dent Res 90 Spec Issue: 392, 2011
8. Weiler RA, **Melander JR**, Miller BD, Kilway KV, Bonewald LF, and Eick JD. Physical Properties of Filled Chemically Initiated Silorane Biomaterials. 89th Annual Meeting & Exhibition of the International Association for Dental Research. J Dent Res 90 Spec Issue: 1186, 2011
9. Miller BD, Weiler RA, **Melander JR**, Nalvarte EL, Kilway KV, Bonewald LF, and Eick JD. Biocompatibility of a Chemically Initiated Silorane Resin. 89th Annual Meeting & Exhibition of the International Association for Dental Research. J Dent Res 90 Spec Issue: 2514, 2011
10. **Melander J,** Ghotbi A, Thiagarajan G, McDonald S, and Walker MP. Assessment of Modifications to Notched Triangular Prism Method. J Dent Res 89 Spec Issue: 1234, 2010.
11. **Melander J**, Weiler RA, Miller B, Kilway K, and Eick JD. Flexural Properties of Mixed-Initiator Silorane Bone Stabilizer. J Dent Res 89 Spec Issue: 1107, 2010.
12. Kilway, KV, Weiler RA, **Melander J**, Miller BD, Schuman T, Velez M, Day D, Bonewald, L, and Eick JD. Investigation of Mixed Initiated Cationic Polymerization of a Silorane Resin. J Dent Res 89 Spec Issue: 1038, 2010.
13. Eick JD, Weiler RA, Sylvester D, Hendricks K, **Melander JR**, and Kilway KV. Optimization and Investigation of Acid-Catalyzed Polymerization of SilMix®. J Dent Res 88 Spec Issue: 2412, 2009.
14. **Melander JR,** Weiler RA, Kilway KV, and Eick JD. Properties of chemically initiated silorane bone stabilizers. J. Dent Res 88 Spec Issue: 2562, 2009.
15. **Melander JR,** Walker MP, Fricke B and Dunn, WP. Development/Preliminary Validation of a Modified Notchless Triangular Prism Protocol. J Dent Res 87 Spec Issue: 0132, 2008.
16. **Spencer P,** Ye Q, Wang Y, Walker MP, Misra A, Marangos O, Kostoryz EL, **Melander JR**, and Gorman N. Structure/Property Relationships in Environmentally Stressed Dentin Adhesives. J Dent Res 86 Spec Issue: 0117, 2007.
17. **Ye Q,** Wang Y, **Melander JR**, Gorman N, Marangos O, Misra A, and SpencerP. **Water-compatible Photoinitiators and Nano-Phase Separated Dentin Adhesives. J Dent Res 87 Spec Issue: 2009, 2007.**
18. **Bashford GR,** Morse JL and **Melander JR**. Novel Fusion Algorithms for Medical Ultrasound Tomography. Proc. SPIE 5559, 392, 2004.

Section 2.1.6 Conference Proceedings: Not Peer Reviewed

None

Section 2.1.7 Conference Presentations

1. **\*Keshwani JR** and Barker B. Wearable Technologies as a Pathway to STEM. Workshop, STEM Think Tank and Conference, Nashville, TN, July 2016.
2. **\*Keshwani JR** and Curtis E.Empowering Undergraduate Engineering Students to Connect Laboratory Experiences with Industry Applications through Fictional Clients. Oral Presentation, ASABE 2016 Annual International Meeting, Orlando, FL, July 2016.
3. **\*Keshwani JR,** and Adams KA. Building Teaching Collaborations across Disciplines. Oral Presentation, 123rd ASEE Annual Conference & Exposition, New Orleans, LA, June 2016.
4. **Keshwani JR**, Klein-Gardner SS, Carrico C, & Yang S. Teachers Talking about Engineering: How to incorporate engineering in K-12 classrooms. Workshop, 123rd ASEE Annual Conference & Exposition, New Orleans, LA, June 2016.
5. **Keshwani JR,** Brandt M., & Forbes C. Translating Applied STEM Research into Secondary Science (TASRs). Oral Presenatation, National Ag in the Classroom Conference, Litchfield Park, AZ, June 2016.
6. \*Brandt M, Forbes CT, & **Keshwani J.** Operationalizing Applied Science: Developing Measures for Elementary Students’ Understanding of STEM Dimensions of Food Systems. Oral Presentation, 2016 NARST Annual International Conference, Baltimore, MD, April 2016.
7. **\*Keshwani JR**, and \*Adams KA. Cross-Disciplinary Outreach Activity to Promote Development of Communication Skills in Engineering Students. Poster Presentation, STEM Education Research Retreat, Lincoln, NE, October 2015.
8. \*Adams KA, **Keshwani JR.** Preparing Pre-Service Teachers to Make Connections between Science and Engineering Concepts through Teamwork with Engineering Students. Oral Presentation, 122nd ASEE Annual Conference & Exposition, Seattle, WA, June 2015.
9. **\*Melander JR,** Curtis E, Adams KA, and Arthurs L. “A Cross-Disciplinary, Service Learning-Based Approach to Enhance Communication Skills.” Oral Presentation, ASABE 2014 Annual International Meeting, Montreal, QC, CA, July 2014.
10. **\*Melander JR,** Holmes RR, Yao X, Weiler RA, and Eick JD. “Measuring Strain in Bone Cement with Carbon Nanotubes.” Poster Presentation, ASME 2012 Summer Bioengineering Conference, Fajardo, PR, June 2012.
11. **\***Holmes RR, **Melander JR,** Weiler RA, Schuman TS, Kilway KV, and Eick JD. “Polymerization Stress and the Influence of TOSU Addends on Methacrylate Composites.” Poster Presentation, ASME 2012 Summer Bioengineering Conference, Fajardo, PR, June 2012.
12. **\*Melander JR,** Holmes RR, Weiler RA, Miller BD, Kilway KV, Schuman TS, and Eick JD. “TOSU Addends Maintain Mechanical Properties while Decreasing Polymerization Stress.” Poster Discussion Presentation, 41st Annual Meeting & **Exhibition of the** American Association of Dental Research, Tampa, FL, March 2012.
13. **\*Melander JR**, Weiler RA, Miller BD, Kilway KV, and Eick JD. “Improving the Strength of a Silorane Bone Cement.” Poster Presentation, Missouri Musculoskeletal Conference, July 2011.
14. **\*Melander JR**, Weiler RA, Miller BD, Kilway KV, and Eick JD. “Flexural Properties of Silorane Bone Cement.” Poster Presentation, ASME 2011 Summer Bioengineering Conference, Farmington, PA, June 2011.
15. **\*Melander JR,** Weiler RA, Miller BD, Kilway KV, and Eick JD. “Handling Properties and Exothermicity of Chemically Initiated Silorane Biomaterial.” Poster Presentation, 89th Annual Meeting & Exhibition of the International Association for Dental Research, San Diego, CA, March 2011.
16. \*Walker MP, Mitts DA, Shin TP, **Melander JR**, and McDonald SK. “Effect of Elastomeric Impression Material Stiffness/Hardness on Impression Removal Difficulty.” Oral Presentation, 89th Annual Meeting & Exhibition of the International Association for Dental Research, San Diego, CA, March 2011.
17. \*Weiler RA, **Melander JR**, Miller BD, Kilway KV, Bonewald LF, and Eick JD. “Physical Properties of Filled Chemically Initiated Silorane Biomaterials.” Poster Presentation, 89th Annual Meeting & Exhibition of the International Association for Dental Research, San Diego, CA, March 2011.
18. \*Miller BD, Weiler RA, **Melander JR**, Nalvarte EL, Kilway KV, Bonewald LF, and Eick JD. “Biocompatibility of a Chemically Initiated Silorane Resin.” Poster Presentation, 89th Annual Meeting & Exhibition of the International Association for Dental Research, San Diego, CA, March 2011.
19. \*Kilway KV, Weiler RA, **Melander JR**, Miller BD, Bi LX, Schuman TP, Day DE, Bonewald LF, and Eick JD. “Development of a novel biomaterial for orthopaedic applications.” Oral Presentation, 2010 Midwest Regional Meeting of the American Chemical Society, Wichita, KS, October 2010.
20. **\*Melander JR**, Weiler RA, Miller BD, Kilway KV, and Eick JD. “Model of Silorane Composite for Bone Stabilization Application.” Oral Presentation, ASME 2010 Summer Bioengineering Conference, Naples, FL, June 2010.
21. **\*Melander JR,** Ghotbi A, Thiagarajan G, McDonald S, and Walker MP. “Assessment of Modifications to Notched Triangular Prism Method.” Oral Presentation, **39th Annual Meeting & Exhibition of the** American Association of Dental Research, Washington, DC, March 2010.
22. **Melander JR**, Weiler RA, Miller B, Kilway K, and \*Eick JD. “Flexural Properties of Mixed-Initiator Silorane Bone Stabilizer.” Poster Presentation, **39th Annual Meeting & Exhibition of the** American Association of Dental Research, Washington, DC, March 2010.
23. \*Kilway, KV, Weiler RA, **Melander JR**, Miller BD, Schuman T, Velez M, Day D, Bonewald, L, and Eick JD. “Investigation of Mixed Initiated Cationic Polymerization of a Silorane Resin.” Poster Presentation, **39th Annual Meeting & Exhibition of the** American Association of Dental Research, Washington, DC, March 2010.
24. \***Melander JR**, Weiler RA, Miller B, Kilway KV, and Eick JD. “Properties of Chemically Activated Silorane Polymers for Use as Bone Stabilizers.” Poster Presentation, 2009 Biomedical Engineering Society Annual Fall Meeting, Pittsburgh, PA, October 2009.
25. Eick JD, Weiler RA, Sylvester D, Hendricks K, **Melander JR**, and \*Kilway KV. “Optimization and Investigation of Acid-Catalyzed Polymerization of SilMix®.” **Poster Presentation, 86th Annual Meeting & Exhibition of the International Association for Dental Research, Miami, FL, April 2009.**
26. \***Melander JR**, Weiler RA, Kilway KV, and Eick JD “Properties of chemically initiated silorane bone stabilizers.” **Poster Presentation, 86th Annual Meeting & Exhibition of the International Association for Dental Research, Miami, FL, April 2009.**
27. \***Melander JR**, Walker MP, Fricke B and Dunn, WP. “Development/Preliminary Validation of a Modified Notchless Triangular Prism Protocol.” Oral Presentation, **37th Annual Meeting & Exhibition of the American Association for Dental Research, Dallas, TX, April 2008.**
28. \*Spencer P, Ye Q, Wang Y, Walker MP, Misra A, Marangos O, Kostoryz EL, **Melander JR**, and Gorman N. “Structure/Property Relationships in Environmentally Stressed Dentin Adhesives.” Oral Presentation, **36th Annual Meeting & Exhibition of the International Association for Dental Research, New Orleans, LA, March 2007.**
29. \*Ye Q, Wang Y, **Melander JR**, Gorman N, Marangos O, Misra A, and SpencerP. **“Water-compatible Photoinitiators and Nano-Phase Separated Dentin Adhesives.” Poster Presentation, 36th Annual Meeting & Exhibition of the International Association for Dental Research, New Orleans, LA, March 2007.**
30. **\*Melander JR and** Bashford **GR. “Ultrasonic Detection of Tooth Fracture.” Oral Presentation, Heartland Biomedical Engineering Symposium, Omaha, NE, April 18, 2005.**
31. **\*Bashford GR,** Morse **JL, and Melander JR. “Novel fusion algorithms for medical ultrasound tomography.” 49th SPIE Annual Meeting: Advanced Signal Processing Algorithms, Architectures, and Implementations. Denver, CO, August 2004.**

**\*indicates presenter**

Section 2.1.8 Invited Talks

1. Promoting Science Literacy through Agricultural and Biological Engineering. Department of Biological and Agricultural Engineering, Kansas State University. Manhattan, KS. February 26, 2016.
2. K-12 Engineering and Electronic Valentines. Aurora HuskeyEd Camp. Aurora, NE. February 13, 2015.
3. Breaking Bones & K-12 Engineering. Teacher training day at ESU #2. Fremont, NE. February 12, 2015.
4. Teaching Coding and Engineering through Wearable Technologies. Nebraska Information Technology Commission. Lincoln, NE. January 31, 2015
5. The Importance of Science Literacy in Society. Nebraska Citizens for Science Forum. Lincoln, NE. January 15, 2015
6. K-12 Engineering. LINKS (Leadership in Nebraska KICKS (Keep Improving Content Knowledge and Skills)) meeting. Omaha, NE. July 22, 2014.
7. More Food for Everyone: Precision Agriculture’s Use of GIS. Broadband Connecting Nebraska. Kearney, Nebraska. October 16, 2013
8. The Diagnosis and Treatment of Biopolymer Stress. Oral Biology Seminar, Department of Oral Biology, School of Dentistry, University of Missouri-Kansas City, February 15, 2012
9. Silorane Composites for Orthopaedic Applications. Oral Biology Seminar, Department of Oral Biology, School of Dentistry, University of Missouri-Kansas City, June 1, 2011
10. Stabilization of Bone Fractures using a Silorane Composite. Alumni Presentation, Department of Biological Systems Engineering, University of Nebraska-Lincoln, April 7, 2010

Section 2.1.9 Other Publications

1. **Melander J**. How to make sense of inconsistencies in science. Prairie Fire. September 2014. <http://www.prairiefirenewspaper.com/2014/09/how-to-make-sense-of-inconsistencies-in-science>
2. **Melander J**. Testing and Re-Testing. Click2SciencePD blog post. July 2014. <http://www.click2sciencepd.org/blog-post/testing-and-re-testing>

**Section 2.2 Grantsmanship Record**

Section 2.2.1 Internally Funded Research Grants

1. $5,000. Ndao, S. and **J. Keshwani**. TeckTal – An online STEM literacy platform for African students and educators. IANR Office of Global Engagement International Impact Award, University of Nebraska-Lincoln. 2016. (my share: $2000)
2. $385,463. Forbes, C. and **J. Keshwani**. Development and Testing of a 3rd-Grade Life Science Unit to Foster 3rd-grade Students' Agricultural Literacy and Life Science Learning. ARD Hatch Multistate Research Enhanced, University of Nebraska-Lincoln. 2015-2018. (my share: $0)
3. $10,000. Barker, B. and **J. Keshwani**. Wearable Technologies Project. Research Council Faculty Seed Grants, University of Nebraska-Lincoln. 2013-2014. (my share: $1,000)

Section 2.2.2 Externally Funded Research Grants

1. $43,221. **Keshwani, J**., A. Pannier, N. Iverson, and K. Adams. Improving Teacher Quality through Biomedical Engineering BLAST! Workshops. Nebraska Coordinating Commission for Postsecondary Education. 2016-2017.
2. $984,189. Barker, B., **J. Keshwani**, M. Krehbiel, C. Nelson, G. Nugent, and W. Weiss. Nebraska Wearable Technologies. NSF. 2014-2017.
3. $75,130. Barker, B., **J. Keshwani**, and C. Nelson. Nebraska Blast! Improving Teacher Quality through STEM Workshops. Nebraska Coordinating Commission for Postsecondary Education. 2014-2015.
4. $500. **J. Keshwani**. Biomedical Engineering Workshop. Nebraska Department of Education. 2014.
5. $15,000. Borck, H. and **J. Keshwani**. Monsanto and 4-H Challenging Youth to be the Solution. National 4-H Council. 2014

Section 2.2.3 External Research Grants Submitted

None

Section 2.2.4 External Research Grants Submitted but not Funded

1. $300,000. Mamo, M., J. Carroll, **J. Keshwani**, D. Lambe, D. Lee, G. Matkin, L. Sandall, W. Schacht, and C. Speth. Fostering the Next Generation of Agricultural and Natural Resources Professionals through Experiential Learning in Research, Education and Extension. USDA-AFRI. 2016-2018.
2. $23,000. L. Luck, K. Anderson, and **J. Keshwani**. Developing the EquiMove Horse Sensor and Instructional Design Website: An online resource to educate people on health and fitness of their horses. American Association of Equine Practitioners Foundation. 2015-2016.
3. $27,720. L. Luck, K. Anderson, and **J. Keshwani**. Equimove Sensor and Instructional Design Website. USA Equestrian Trust. 2015-2016.
4. $2,499,917. Barker, B., G. Bashford, **J. Keshwani**, G. Nugent, and J. Pedersen. WearTec + IoT (Internet of Things). NSF. 2015-2018.
5. $387,525. Stains, M., K. Adams, B. Couch, J. Dauer, J. Dauer, C. Forbes, D. Golick, M. Griep, **J. Keshwani**, M. Kuzila, Y.-J. Lai, M. Pegg, and A. Zygielbaum. REU Site: Immersion into the Science, Technology, Engineering, and Mathematics (STEM) Education Research Community. NSF. 2015-2018.
6. $34,9655. Hay, J. and **J. Keshwani**. Benchmarking Energy Literacy in Nebraska. NE Energy Office. 2014.
7. $2,953,460. Barker, B., **J. Keshwani**, C. Nelson, and G. Nugent. Project SENSE. NSF. 2013-2017.

**Section 2.3 Research Patents and Awards**

Section 2.3.1 Research Patents

 None

Section 2.3.2 National and International Research Awards and Recognition

None

Section 2.3.3 Regional and Local Research Awards and Recognition

None

**Section 3 Teaching Accomplishments**

**Section 3.1 Ph.D. Students**

Section 3.1.1 Ph.D. Graduated

None

Section 3.1.2 Ph.D. in Progress

None

**Section 3.2 M.S. Students**

Section 3.2.1 M.S. Graduated

None

Section 3.2.2 M.S. in Progress

1. 2015 – present Tyler Wolken M.S. Applied Science

Section 3.2.3 Non-Thesis Graduate Students Advised

1. 2015 – present Holly Carr M.S. Applied Science

Section 3.2.4 Graduate Student Independent Research Projects Supervised

None

Section 3.2.5 M.S. Student Committees Served On

1. 2015 – present Dagen Valentine M.S. Applied Science
2. 2015 – present Carol Thompson M.S. Animal Science
3. 2014 – present Molly Brandt M.S. Applied Science
4. 2013 Jessica Taylor M.S. Agricultural & Biological Systems Engineering

**Section 3.3 Undergraduate Students**

Section 3.3.1 Independent Research/UCARE

1. 2015 – present Bennett Turner Agricultural Engineering, UNL

Equimove: Horse sensor development

1. 2015 – present Meghan Biegert Biological Systems Engineering, UNL

Wear-TEC projects and curriculum development

1. 2015 – present Katie Meiergerd Biological Systems Engineering, UNL

UCARE: K-12 Engineering outreach activity development

1. 2014 – 2015 Whitney Schultz Mechanized Systems Management, UNL

National Center for Agricultural Literacy

1. 2014 – 2015 Mackenzie Miller Biological Systems Engineering, UNL

Wear-TEC teacher trainings and student workshops

1. 2013 – 2014 Nikolai Reitz Biological Systems Engineering, UNL

UCARE: Development and Validation of E-Textile Activities to Teach Elementary Students the Engineering Design Process

1. 2013 Maggie Clay Mechanical Engineering, UNL

Mad Science Mondays at the Edgerton Explorit Center, Aurora, NE

1. 2012 Grant Meyer Mechanical Engineering, UMKC

Material Properties of Experimental Biopolymers for Dental and Orthopaedic Applications

1. 2012 Daniel Rodman Chemistry, UMKC

Material Properties of Experimental Biopolymers for Dental and Orthopaedic Applications

1. 2011 – 2012 Ryan Holmes Civil Engineering, UMKC

Material Properties of Experimental Biopolymers for Dental and Orthopaedic Applications

1. 2011 Aaron Dorsett Mechanical Engineering, UMKC

Mechanical Testing of Silorane Bone Cement

1. 2002 – 2003 Hajira Ahmad Biological Systems Engineering, UNL

Section 3.3.1.1 Senior Design Teams Advised

1. 2015 – present Zach Janecek, Brinson Chapp, Michael Moeller and Kate Watts

 Stimulating Cognitive Development in Disabled Infants through Positive Feedback

1. 2014 – 2015 Jared Beyersdorf, Ted Kocher, Kelli Rice and Emily Harrison

 McKenzie’s Mobility Team

1. 2012 – 2013 Monica Krause, Jared Ostdiek, and Katelyn Stanley

 Abdominal Pressure Sensing Dressing

1. 2011 – 2012 Beth Cowles, Liz Hungerford, and Tyler Borcyk (client)

Bone Cement Mixing Device

1. 2010 – 2011 Johnathon McCoy, Allison Mettler, Cady Sargus, and Ted Kocher (client)

Placement Guide for Internal Silorane Fracture Stabilization

Section 3.3.2 Average number of Undergraduates Advised per Year

|  |  |
| --- | --- |
| Year | Average Number Advised |
| 2012 | 0 |
| 2013 | 15 |
| 2014 | 12 |
| 2015 | 15 |

**Section 3.4 Teaching Awards and Recognition**

Section 3.4.1 National and International Teaching Awards and Recognition

None

Section 3.4.2 Regional and Local Teaching Awards and Recognition

2016 Junior Faculty Holling Family Award for Teaching Excellence

2015 UNL Parents Recognition Award

**Section 4 Service Accomplishments**

**Section 4.1 Professional Service**

Section 4.1.1 Journal Editorship

 None

Section 4.1.2 Technical Reviewer for Journals

On average I review 2 papers a year.

1. International Journal of Dentistry
2. Transactions of the American Society of Agricultural and Biological Engineering

Section 4.1.3 Leadership Positions in International and National Organizations

1. June 2015 – present **Chair, Precollege Division Sunday Workshop**

 American Society of Engineering Education

1. July 2014 – present **EOPD-203 Undergraduate & Graduate Instruction**

 Vice Chair, July 2015 – present

 Secretary, July 2014 – July 2015

 American Society of Agricultural and Biological Engineers

1. July 2014 – present **Committee Member, K-12 Workshop Committee**

K-12 and Precollege Engineering Division

 American Society of Engineering Education

1. July 2013 – present **New Engineering Educators Division**

 Treasurer, July 2015 – present

 Secretary, July 2013 – July 2015

 American Society of Engineering Education

Section 4.1.4 Leadership Positions in Regional and Local Organizations

None

Section 4.1.5 Membership in Professional Organizations

1. 2013 – present: Member of American Society of Agricultural and Biological Engineers (ASABE)
2. 2013 – present: Member of American Society of Engineering Education (ASEE)
3. 2013 – present: Member of North American Colleges & Teachers of Agriculture (NACTA)
4. 2009 – 2012: Member of American Society of Mechanical Engineers (ASME)
5. 2006 – 2012: Member of International Association of Dental Research (IADR)
6. 2001 – 2004: Member of Biomedical Engineering Society (BMES)

Section 4.1.6 National and International Service Awards

None

Section 4.1.7 Regional and Local Service Awards

None

Section 4.1.8 Research Review Panels and Dates of Service

None

**Section 4.2 University Service**

Section 4.2.1 Leadership Positions

1. 2014 – present **Coordinator, National Center for Agricultural Literacy**

 University of Nebraska-Lincoln

Section 4.2.2 Committee Memberships

1. 2015 – present **Extension Professional Orientation & Campus Visit Host**

 University of Nebraska-Lincoln

**Section 4.3 College Service**

Section 4.3.1 Leadership Positions

None

Section 4.3.2 Committee Memberships

1. 2015 – present CASNR Teaching and Learning Improvement Committee
2. 2015 – present Masters of Applied Science – Science for Educators Facilitation Committee

**Section 4.4 Unit Service**

Section 4.4.1 Leadership Positions

None

Section 4.4.2 Committee Memberships

1. 2014 – present Curriculum Committee Member