

Julie Stahmer Linsey

(Julie Lynn Stahmer)

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<u>Education</u>	<i>The University of Texas at Austin</i>	Austin, Texas
	Ph.D. Mechanical Engineering	December 2007
	<i>Design-by-Analogy and Representation in Innovative Engineering Concept Generation</i>	
	Co-Advisors:	
	Dr. Kristin Wood	Dr. Arthur Markman
	Dept. of Mechanical Engineering	Dept. of Psychology
	<i>The University of Texas at Austin</i>	Austin, Texas
	M.S. Mechanical Engineering	May 2005
	<i>University of Michigan</i>	Ann Arbor, Michigan
	B.S.E. Mechanical Engineering	April 2001
	Magna Cum Laude	

Academic Appointments

Assistant Professor	Georgia Institute of Technology	1/2013-present
Assistant Professor	Texas A&M University	1/2008-12/2012

Honors and Awards

- 2012 Ferdinand P. Beer and E. Russell Johnston, Jr., Outstanding New Mechanics Educator Award
- 2012 IAAI Deployed Application Award for the paper, "Mechanics: A Sketch-Based Tutoring System for Statics Courses"
- 2010 ASEE-ERM (Education Research Methods) Apprentice Faculty
- Frontiers in Education Conference 2009 New Faculty Fellow
- Aggie 100 Scholar 2009
- American Society for Engineering Education (ASEE) 2006 Annual Conference Best Paper Nomination:
Linsey, J., Cobb, B., Jensen, D., Wood, K., and Eways, S., 2006, "Methodology and Tools for Developing Hands-on Active Learning Activities."
- RESNA (Rehabilitation Engineering & Assistive Technology Society of North America) 2006 Student Design Competition Winner
- Livingston Fellowship (Fall 2007, tuition and stipend)
- ASEE 2007 Annual Conference Mechanics Division Best Session Presentation
- Thrust 2000 Fellowship (9/2004-5/2007)
- Agnes T. and Charles F. Wiebusch Fellowship (9/2002-5/2004)
- Epeians- Engineering Leadership Honor Society (1/2001-4/2001)
- Marian Sarah Parker Scholar (2000)
- Golden Key National Honor Society (6/2000)
- Pi Tau Sigma- Mechanical Engineering Honor Society (1/1999-4/2001)
- General Electric Undergraduate Fellowship (9/1998-5/1999)
- Class Honors (3/1998, 3/1999)
- Dean's List (12/1997, 5/1998, 12/1998, 4/2001)

Publications

*Denotes Dr. Linsey's students

⁺Denotes other students

Patents

1. Buczkowski, J., Dummer, D., Stahmer (Linsey), J., and Thordarson, B., December 7, 2004, *Adapter Method and Apparatus for Interfacing a Tester with a Device under Test*, U.S. Patent 6,828,773.
2. Ahrikencheikh, C. and Stahmer (Linsey), J., December 23, 2003, *Method and Apparatus for the Management of Forces in a Wireless Fixture*, U.S. Patent 6,667,628.

Book Chapters

1. Linsey, J. S., and Viswanathan*, V., 2013, "Chapter 9: Overcoming Cognitive Challenges in Bioinspired Design and Analogy," In Goel, McAdams, and Stone (Eds.) *Biologically Inspired Design: Computational Methods and Tools*, accepted.
2. Linsey, J. S., and Becker*, B., 2010, "Effectiveness of Brainwriting Techniques: Comparing Nominal Groups to Real Teams," In T. Taura and Y. Nagai (Eds.) *Design Creativity 2010*, Springer, pp. 165-172.
3. Smith, S., Linsey, J., and Kerne, A., 2010, "Using Evolved Analogies to Overcome Creative Design Fixation," In T. Taura and Y. Nagai (Eds.) *Design Creativity 2010*, Springer, pp. 35-40.
4. Markman, A. B., Wood, K. L., Linsey, J. S., Murphy⁺, J. T., and Laux⁺, J. P., 2009, "Supporting Innovation by Promoting Analogical Reasoning." In A. B. Markman and K. L. Wood (Eds.) *Tools for Innovation*, Oxford University Press, pp. 85-103.
5. Wood, K., and Linsey, J., 2006, "Understanding the Art of Design: Tools for the Next Edisonian Innovators," in A. Markman and B. Ross (Eds.) *The Psychology of Learning and Motivation*, Academic Press, 47, pp. 65-122.

Refereed Journal Publications

1. Valentine⁺, S., Atilola*, O., McTigue, E., Linsey, J., and Hammond, T., "Mechanix: A Sketch Based Tutoring System that Automatically Corrects Hand-Sketched Statics Homework," *ACM Transactions on Interactive Intelligent Systems (ACM Trans. Interact. Intell. Syst.)*, in review.
2. Viswanathan*, V., Esposito*, N., and Linsey, J., "A Study on the Role of Physical Models in the Mitigation of Design Fixation," *Journal of Engineering Design*, in review.
3. Glier*, M., Tsenn*, J., McAdams, D., and Linsey, J.S., 2012, "Evaluating the Directed Method for Bioinspired Design," *ASME Journal of Mechanical Design*, in review.
4. Viswanathan*, V., and Linsey, J., "The Role of Sunk Cost in Engineering Idea Generation: An Experimental Investigation," *ASME Journal of Mechanical Design*, in review.
5. Viswanathan*, V., and Linsey, J., "Design Fixation and its Mitigation: a Study on the Role of Expertise," *ASME Journal of Mechanical Design*, in review.
6. Viswanathan*, V., and Linsey, J., 2013, "Examining Design Fixation in Engineering Idea Generation: The Role of Example Modality," *International Journal of Design Creativity and Innovation*, , accepted.
7. Valentine⁺, S., Vides⁺, F., Lucchese⁺, G., Turner⁺, D., Kim⁺, H.H., Wenzhe⁺, L., Linsey, J. and Hammond, T., 2013, "Mechanix: A Sketch-Based Tutoring & Grading System for Free-Body Diagrams," *AI Magazine*, accepted.

8. Viswanathan*, V., and Linsey, J., 2012, "Physical Models and Design Thinking: A Study of Functionality, Novelty and Variety of Ideas," *ASME Journal of Mechanical Design*, 134(9), 091004-1-12.
9. Linsey, J., Markman, A., and Wood, K., 2012, "Design by Analogy: A Study of the WordTree Method for Problem Re-representation," 134(4), pp. 041009-1-12 *ASME Journal of Mechanical Design*.
10. Glier*, M., Schmidt*, S., Linsey, J., and McAdams, D., 2011, "Distributed Ideation: Idea Generation in Distributed Capstone Engineering Design Teams," *International Journal of Engineering Education*, 27(6), pp. 1281–1294.
11. Smith, S., and Linsey, J., 2011, "A Three-Pronged Approach for Overcoming Design Fixation," *Journal of Creative Behavior*, 45(2), pp. 83-91.
12. Linsey, J. S., Clauss, E. F., Kurtoglu, T., Murphy, J. T., Wood, K. L., and Markman, A. B., 2011, "An Experimental Study of Group Idea Generation Techniques: Understanding the Roles of Idea Representation and Viewing Methods," *ASME Journal of Mechanical Design*, 133(3), pp.031008-1-15.
13. English, K., Naim, A., Lewis, K., Schmidt*, S., Viswanathan*, V., Linsey, J., McAdams, D., Bishop, B., Campbell, M., Poppa, K., Stone, R., and Orsborn, S., 2010, "Impacting Designer Creativity through IT-Enabled Concept Generation." *ASME Journal of Computing and Information Science in Engineering (JCISE) Special Issue on Knowledge-Based Design*, 10(3), pp. 031007-1-10.
14. Linsey, J., Tseng, I., Fu, K., Cagan, J., Wood, K., and Schunn, C., 2010, "A Study of Design Fixation, its Mitigation and Perception in Engineering Design Faculty," *ASME Journal of Mechanical Design*, 132(4), pp. 041003-1-12.
15. Linsey, J., and Viswanathan*, V., 2010, "Innovation Skills for Tomorrow's Sustainable Designers," *International Journal of Engineering Education*, 26(2), pp. 451-461.
16. Kurtoglu, T., Campbell, M., and Linsey, J., 2009, "An Experimental Study on the Effects of a Computational Design Tool on Concept Generation," *Design Studies*, 30(6), pp. 676-703.
17. Linsey, J., Talley, A., Jensen, D., and Wood, K. L., 2009, "From Tootsie Rolls to Broken Bones: An Innovative Approach for Active Learning in Mechanics of Materials," *Advances in Engineering Education*, 1(3), pp. 1-23.
18. Linsey, J., Wood, K., and Markman, A., 2008, "Modality and Representation in Analogy," *AIEDAM*, 22(2), pp. 85-100.
19. Hey, J., Linsey, J., Agogino, A., Wood, K., 2008, "Analogies and Metaphors in Creative Design," *International Journal of Engineering Education*, 24(2), pp. 283-294.

Highly Selective Refereed Conference Proceedings

Refereed Conference Proceedings

1. Viswanathan*, V., and Linsey, J., 2013, "Mitigation of Design Fixation in Engineering Idea Generation: A Study on the Role of Defixation Instructions," *International Conference on Research into Design (ICoRD)*, Chennai, India.
2. Valentine⁺, S., Vides⁺, F., Lucchese⁺, G., Turner⁺, D., Kim⁺, H.H, Li⁺, W., Linsey, J., Hammond, T., 2012, "Mechanix: A Sketch-Based Tutoring System for Statics Courses," *The Twenty-Fourth Conference on Innovative Applications of Artificial Intelligence*, Toronto, Ontario, Canada.
3. Field⁺, M., Valentine⁺, S., Linsey, J., and Hammond, T., 2011, "Sketch Recognition Algorithms for Comparing Complex and Unpredictable Shapes," *Twenty-Third International Joint Conference on*

Artificial Intelligence (IJCAI 2011), AAAI Press, Barcelona, Spain, July 16-22, 2011. (Acceptance rate: 400 of 1325, 30%.)

4. Viswanathan*, V. and Linsey, J., 2012, "Physical Examples in Engineering Idea Generation: An Experimental Investigation," *International Conference on Design Creativity (ICDC2012)*, Glasgow, UK.
5. Esposito*, N., and Linsey, J.S., 2012, "Principles of Green Design: Analyzing User Activities and Product Feedback," *2012 ASME IDETC*, Chicago, IL.
6. Glier, M., Tsenn, J., McAdams, D., and Linsey, J.S., 2012, "Evaluating the Directed Method for Bioinspired Design," *2012 ASME IDETC*, Chicago, IL.
7. Atilola*, O., Viswanathan*, V.K., and Linsey, J.S., 2012, "A Study on the Representation of Examples in Learning Engineering Concepts," *2012 ASME IDETC*, Chicago, IL.
8. Viswanathan*, V.K. and Linsey, J.S., 2012, "A Study on the Role of Expertise in Design Fixation and its Mitigation", *2012 ASME IDETC – Design Theory and Methodology*, Chicago, IL.
9. Viswanathan*, V.K. and Linsey, J.S., 2012, "Physical Modeling in Design Projects: Development and Testing of a New Design Method," *ASEE/IEEE Frontiers in Education Conference*, Seattle, WA.
10. Atilola*, O., Vides⁺, F., McTigue, E., Linsey, J., and Hammond, T., A., 2012, "Automatic Identification of Student Misconcepts and Errors for Truss Analysis," *ASEE Annual Conference & Exposition*, San Antonio, TX.
11. Atilola*, O., Osterman*, C., Vides⁺, F., McTigue, E., Linsey, J.S., and Hammond, T., 2012, "Mechanix: The Development of a Sketch Recognition Truss Tutoring System," *ASEE Annual Conference 2012*, San Antonio, TX.
12. Viswanathan*, V., Esposito*, N. and Linsey, J., 2012, "Training Tomorrow's Designers: a Study on Design Fixation", *ASEE Annual Conference 2012*, San Antonio, TX.
13. Viswanathan*, V., Esposito*, N. and Linsey, J., 2012, "Build to Learn: Effective Strategies to Train Tomorrow's Designers", *ASEE Annual Conference 2012*, San Antonio, TX.
14. Glier*, M., Tsenn*, J., McAdams, D.A., and Linsey, J. S., 2012, "Evaluating Methods for Bioinspired Concept Generation," *Design, Computing, Cognition '12 (DCC'12)*, College Station, TX.
15. Glier*, M., Tsenn*, J., McAdams, D.A., and Linsey, J. S., 2011, "Methods for Supporting Bioinspired Design," *2011 ASME IMECE*, Denver, Colorado.
16. Perez*, A. G., Linsey, J. S., Tsenn*, J., and Glier*, M., 2011, "Identifying Product Scaling Principles: A Step Towards Enhancing Biomimetic Design," *2011 ASME IMECE*, Denver, Colorado.
17. Viswanathan*, V., and Linsey, J., 2011, "Understanding Physical Models in Design Cognition: A Triangulation of Qualitative and Laboratory Studies," *ASEE/IEEE Frontiers in Education Conference*, Rapid City, SD.
18. Atilola*, O., Field, M., Hammond, T., McTigue, E., and Linsey, J., 2011, "Evaluation of a Natural Sketch Interface for Truss FBDs and Analysis," *ASEE/IEEE Frontiers in Education Conference*, Rapid City, SD.
19. Osterman*, C., Viswanathan*, V., and Linsey, J., 2011, "Teaching Capstone Design: The Influence of Problem Complexity," *ASEE/IEEE Frontiers in Education Conference*, Rapid City, SD.
20. Lopez*, R., Linsey, J. S., and Smith, S., 2011, "Characterizing the Effect of Domain Distance in Design-by-Analogy," *2011 ASME IDETC*, Washington D.C.

21. Perez*, A. G., and Linsey, J. S., 2011, "Identifying Product Scaling Principles: A Tool for Bioinspired Design and Beyond," *2011 ASME IDETC- Design Automation Conference*, Washington D.C.
22. Glier*, M. W., McAdams, D. A., and Linsey, J., 2011, "Concepts in Biomimetic Design: Methods and Tools to Incorporate into a Biomimetic Design Curriculum," *2011 ASME IDETC*, Washington D.C.
23. Viswanathan*, V., and Linsey, J., 2011, "Design Fixation in Physical Modeling: An Investigation on the Role of Sunk Cost," *2011 ASME IDETC-Design Theory and Methodology Conference*, Washington D.C.
24. Atilola*, O., Field, M., Linsey, J., McTigue, E., and Hammond, T., 2011, "Mechanix: A Sketch Recognition Truss Tutoring System," *2011 ASME IDETC*, Washington D.C.
25. Krager, J., Wood, K. L., Crawford, R. H., Jensen, D., Cagan, J., Schunn, C. D., Linsey, J. S. and White, C., 2011, "Understanding Innovation: A Study of Perspectives and Perceptions in Engineering," *2011 ASME IDETC-Design Theory and Methodology Conference*, Washington D.C.
26. Viswanathan*, V., and Linsey, J., 2011, "Understanding Fixation: A Study on the Role of Expertise," *International Conference on Engineering Design*, Copenhagen, Denmark.
27. Oriakhi*, E., Linsey, J., and Peng, X., 2011, "Design-by-Analogy Using the WordTree Method and an Automated WordTree Generating Tool," *International Conference on Engineering Design*, Copenhagen, Denmark.
28. Viswanathan*, V., and Linsey, J., 2011, "Physical Models and Design Cognition: Triangulating Controlled Lab Studies with Industrial Case Studies," *International Conference on Research into Design (ICoRD)*, Bangalore, India.
29. Viswanathan*, V., and Linsey, J., 2010, "Work in Progress – Understanding Design Fixation: A Sunk Cost Perspective on Innovation," *ASEE/IEEE Frontiers in Education Conference*, Washington, D.C.
30. Viswanathan*, V., and Linsey, J., 2010, "Physical Models in the Idea Generation Process: Hindrance or Help?" *The 2010 ASME IDETC-Design Theory and Methodology Conference*, Montreal, Canada.
31. Schmidt, L., Hernandez, N., Kremer, G., and Linsey, J., 2010, "Pilot Studies Systematic Ideation Curriculum Effectiveness Investigation & Deployment to Enhance Design Learning," *The 2010 ASME IDETC*, Montreal, Canada.
32. Gadwal*, A., and Linsey, J. S., 2010, "Exploring Multiple Solutions and Multiple Analogies to Support Innovative Design," *The International Conference on Design, Computing and Cognition*.
33. Linsey, J., White, C., Schmidt, K., Wood, K., and Jensen, D., 2010, "Results from the Designing Active Learning Activities and Associated Assessment Plans Workshop," *2010 American Society for Engineering Education Annual Conference*, Louisville, KY.
34. Hernandez, N., Kremer, G. O., Linsey, J., and Schmidt, L. C., 2010, "Systematic Ideation Curriculum Effectiveness Investigation & Deployment to Enhance Design Learning," *2010 American Society for Engineering Education Annual Conference*, Louisville, KY.
35. McAdams, D. A., and Linsey, J. S., 2010, "dDesign Education: A Globally Distributed Capstone Engineering Design Experience," *Capstone Design Conference*, Boulder, CO.
36. Linsey, J., Viswanathan*, V. K., Gadwal*, A., 2010, "The Influence of Design Problem Complexity on the Attainment of Design Skills and Student Perceptions," *IEEE EDUCON 2010*, Madrid, Spain.

37. White, C., Linsey, J., Wood, K. L., Schmidt, K., and Jensen, D., 2010, "Enhancing Engineering Education by Understanding Complexities of Students," *American Educational Research Association (AERA) Annual Meeting*, Denver, Colorado.
38. Viswanathan*, V. K., and Linsey, J. S., 2009, "Enhancing Student Innovation: Physical Models in the Idea Generation Process," *ASME/IEEE Frontiers in Education Conference*, San Antonio, TX.
39. Weaver, J. M., Kuhr, R., Wang, D., Crawford, R. H., Wood, K. L., Jensen, D., Linsey, J. S., 2009, "Increasing Innovation in Multi-Functional Systems: Evaluation and Experimentation of Two Ideation Methods for Design," *2009 ASME IDETC*, San Diego, CA.
40. Linsey, J., Tseng, I., Fu, K., Cagan, J., and Wood, K., 2009, "Reducing and Perceiving Design Fixation: Initial Results from a NSF-Sponsored Workshop," *2009 International Conference on Engineering Design*, Stanford, CA.
41. Linsey, J., 2009, "Innovation Skills for Tomorrow's Sustainable Designers," *Mudd Design Workshop VII*, Claremont, CA.
42. Jensen, D., Wood, J., Weaver, J., Wood, K., and Linsey, J., 2009, "Techniques to Enhance Concept Generation and Develop Creativity," *2009 American Society for Engineering Education Annual Conference*, Austin, TX.
43. Linsey, J., Wood, K., and Markman, A., 2008, "Increasing Innovation: Presentation and Evaluation of the WordTree Design-by-Analogy Method," *2008 ASME IDETC-Design Theory and Methodology Conference*, New York, NY.
44. Linsey, J., Markman, A., and Wood, K., 2008, "WordTrees: A Method for Design-by-Analogy," *2008 American Society for Engineering Education Annual Conference*, Pittsburg, PA.
45. Linsey, J., Talley, A., Wood, K., Jensen, D., and Schmidt, K., 2008, "PHLIPs for Active Learning," *2008 American Society for Engineering Education Annual Conference*, Pittsburg, PA.
46. Linsey, J., Laux, J., Clauss, E. F., Wood, K., and Markman, A., 2007, "Increasing Innovation: A Trilogy of Experiments towards a Design-By-Analogy Method," *Proceedings of the 2007 ASME IDETC- Design Theory and Methodology Conference*, Las Vegas, NV.
47. Linsey, J., Laux, J., Clauss, E., Wood, K., and Markman, A., 2007, "Effects of Analogous Product Representation on Future Design-by-Analogy," *International Conference on Engineering Design*, Paris, France.
48. Hey, J., Linsey, J., Agogino, A., and Wood, K., 2007, "Analogies and Metaphors in Creative Design," *Proceedings of the Mudd Design Workshop VI*, Claremont, CA.
49. Linsey, J., Talley, A., Jensen, D., Wood, K., Schmidt, K., Kuhr, R., and Eways, S., 2007, "From Tootsie Rolls to Composites: Assessing a Spectrum of Active Learning Activities in Engineering Mechanics," *Proceedings of the 2007 American Society for Engineering Education Annual Conference*, Honolulu, HI.
50. Linsey, J. S., Murphy, J. T., Markman, A. B., Wood, K. L., and Kurtoglu, T., 2006, "Representing Analogies: Increasing the Probability of Success," *Proceedings of the ASME IDETC-Design Theory and Methodology Conference*, Philadelphia, PA.
51. Green, M. G., Linsey, J. S., Seepersad, C. C., Wood, K. L., and Jensen, D. J., 2006, "Frontier Design: A Product Usage Context Method," *Proceedings of the ASME IDETC-Design Theory and Methodology Conference*, Philadelphia, PA.
52. Linsey, J., Cobb, B., Jensen, D., Wood, K., and Eways, S., 2006, "Methodology and Tools for Developing Hands-on Active Learning Activities," *Proceedings of the 2006 American Society for Engineering Education Annual Conference*, Chicago, IL.

53. Green, M., Linsey, J., Seepersad, C., Schmidt, K., and Wood, K., 2006, "Design for Frontier Contexts: Classroom Assessment of a New Design Methodology with Humanitarian Applications," *Proceedings of the 2006 American Society for Engineering Education Annual Conference*, Chicago, IL.
54. Linsey, J. S., Green, M. G., Murphy, J. T., Wood, K. L., and Markman, A. B., 2005, "Collaborating to Success: An Experimental Study of Group Idea Generation Techniques," *Proceedings of the ASME IDETC- Design Theory and Methodology Conference*, Long Beach, CA.
55. Green, M. G., Tan, J., Linsey, J. S., Seepersad, C. C., and Wood, K. L., 2005, "Effects of Product Usage Context on Consumer Product Preferences," *Proceedings of the ASME IDETC-Design Theory and Methodology Conference*, Long Beach, CA.
56. Linsey, J. S., Green, M. G., Van Wie, M., Wood, K. L., and Stone, R., 2005, "Functional Representations in Conceptual Design: A First Study in Experimental Design and Evaluation," *Proceedings of the 2005 American Society for Engineering Education Annual Conference*, Portland, OR.
57. Farina, M., Stahmer (Linsey), J., Schultz, W., and Brei, D., 2001, "Challenges in Establishing ProCEED: Program for Civic Engagement in Engineering Design," *Proceedings of the 2001 American Society for Engineering Education Annual Conference*, Albuquerque, NM.

Conference Proceedings

1. Linsey, J., McTigue, E., Hammond, T., Field, M., and Atilola*, O., 2011, "Sketched-Truss Recognition Tutoring System: Improved Student Learning through Active Learning and Immediate Student Feedback," NSF 2011 CCLI-TUES Conference.
2. Gadwal*, A., and Linsey, J. S., 2010, "Inspiring Multiple Solutions from a Single Analogy," *13th AIAA/ISSMO Multidisciplinary Analysis Optimization (MAO) Conference*, Fort Worth, TX.
3. Smith, S. M., and Linsey, J., 2010, "A three-pronged approach for overcoming design fixation," *International Symposium on Creative Design Processes: Fixation or Inspiration? The Role of Internal and External Sources on Idea Generation*. Delft University of Technology, Delft, The Netherlands.
4. Stone, R., Orsborn, S., Lewis, K., English, K., Campbell, M., McAdams, D., and Linsey, J., 2009, "Early Project Status Report on VisualizeIT: Measuring the Impact of IT-Enabled Concept Generation on Designer Creativity," *Proceedings of the 2009 NSF CreativeIT Workshop*.
5. Wood, K., Markman, A., Linsey, J., and Laux, J., 2008, "Fundamental Studies of Generating Concepts through Design-by-Analogy," *Proceedings of the NSF CMMI Engineering Research and Innovation Conference 2008*.
6. Ajetunmobi, A., Gupta, G., Linsey, J., Madhavan, K., Maheshwaraa, U., and Nakhjavani, O., 2006, "A Portable Switch Activated Assistive Device to Fold Laundry," *RESNA (Rehabilitation Engineering & Assistive Technology Society of North America) 2006 Annual Conference*, Atlanta, GA.

Poster Only Presentations

- Glier*, M., Tsenn*, J., Linsey, J. S., and McAdams, D.A., 2012, "Teaching Bioinspired: Integrating State-of-the-Art Methods for Bioinspired Design into Design Education," *Design, Computing, Cognition '12 (DCC'12)*, College Station, TX.
- Tsenn*, J., Glier*, M., Linsey, J. S., and McAdams, D.A., 2012, "Evaluating Idea Generation in Engineering Freshman and Seniors," *Design, Computing, Cognition '12 (DCC'12)*, College Station, TX.

- Viswanathan*, V.K., and Linsey, J.S, 2012, “Effects of Physical Models on Design Cognition,” *Design, Computing, Cognition '12 (DCC'12)*, College Station, TX
- Viswanathan*, V.K., and Linsey, J.S, 2012, “Mitigation of Fixation to Negative Examples through Physical Modeling,” *Design, Computing, Cognition '12 (DCC'12)*, College Station, TX.
- Atilola*, O., Osterman*, C., Hammond, T., McTigue, E., Green, M., and Linsey, J., 2012, "Mechanix—A Learning Tool for Trusses and Free Body Diagrams", *Design, Computing and Cognition Conference*, College Station, TX
- Viswanathan*, V. K., and Linsey, J. S., 2010, “Effects of Representations in Engineering Idea Generation Process,” *CIE 2010 Graduate Research Poster at the 2010 IDETC Conference*, Montreal, Quebec, Canada.
- Gadwal*, A., Schmidt*, S., Viswanathan*, V. K., and Linsey, J. S., 2009, “Idea Generation in Engineering Design,” *Armadillo: The Southwest Cognition Conference*, Houston, TX.
- Viswanathan*, V. K., and Linsey, J. S., 2009, “Evaluation of VisualizeIT: Effects of Representations on Idea Generation,” *CIE 2009 Graduate Research Poster at the 2009 IDETC Conference*, San Diego, CA.

Invited Conference Special Session Panel Member

- Gero, J., Hernandez, N., Linsey, J., Williams, C., 2012, “Research Methods in Engineering Design Education,” Invited Panel at the ASME 2012 IDETC: Design Education Conference.
- Bohm, M., Goff, R., Linsey, J., Parkinson, M., and Summers, J., 2011, “Building Bridges for Engineering Education – Partnership with Industry,” Invited Panel at the ASME 2011 IDETC: Design Education Conference.
- Dong, A., Linsey, J. Mistree, F., McCormack, J., Summers, J., Thurston, D., 2009, “Design Research Problems Discovered by Design Research Solutions”, Invited Panel at the ASME 2009 IDETC: Design, Theory and Methods Conference.

Workshops Presented

- Fuge, M., Agogino, A., Linsey, J., Stone, R., 2012, “Analogies and Metaphors in Design Cognition: Theory and Tools for Design Practice,” *DCC'12 (Design, Computing, Cognition) Conference*, College Station, TX.
- Linsey, J.S., Hammond, T., McTigue, E., 2012, “Mechanix- A free body diagram and truss tutoring software,” Session U452B, *2012 ASEE Annual Conference*, San Antonio, TX.
- Linsey, J., White, C., Schmidt, K., Wood, K., and Jensen, D., 2009, “Designing Active-Learning Activities and Associated Assessment Plans,” Session 0566, *2009 ASEE Annual Conference*, Austin, TX.
- Linsey, J., and Schmidt, K., 2009, “Active Learning Products for Mechanics of Materials,” *Hands-on Workshop for Three NSF-funded Innovations in Mechanics Education*, State College, PA.
- Wood, K., and Linsey, J., 2008, “Designing Active Learning Activities and Associated Assessment Plans,” invited workshop at the *NSF 2008 CCLI (Course, Curriculum, and Laboratory Improvement) PI Conference*, Washington DC.

Invited Talks

Linsey, J. S., “Enhancing Engineering Innovation and Creativity,” Alcoa Technical Center, Pittsburg, PA, May 12th, 2010.

Linsey, J. S., “Enhancing Engineering Innovation and Creativity,” GM Tech Center, Warren, MI, November 5th, 2008.

Grants

- Collaborative Research: MAPS - MetaAnalogy via Performance Specification, PI: Linsey, Collaborative with Turner (Colorado Schools of Mines)
- *Collaborative Research: Enabling Instructors to Teach Statics Actively*, PI: Linsey, Co-PIs: Hammond, McTigue, Collaborative with Green (LeTourneau University)
- *Learning to Innovate Through Bioinspired Design*, PI: Linsey, Co-PIs: McAdams and McTigue
- *REU: Learning to Innovate Through Bioinspired Design*, PI: Linsey
- *Enhancing Engineering Innovation through Physical Representation: Identifying the Cognitive Enhancements Provided by Representation and Creating Novel Design Methods*, PI: Linsey,
- *Sketched-Truss Recognition Tutoring System: Improved Student Learning through Active Learning and Immediate Student Feedback*, PI: Linsey, Co-PIs: Hammond and McTigue
- *REU: Enhancing Engineering Innovation through Physical Representation: Identifying the Cognitive Enhancements Provided by Representation and Creating Novel Design Methods* PI: Linsey,
- 2010 ASEE-ERM (Education Research Methods) Apprentice Faculty Grant, PI: Linsey
- Frontiers in Education Conference (FIE) New Faculty Fellow Grant, PI: Linsey
- *Workshop on Designing Active Learning Activities and Associated Assessment Plans*, National Science Foundation, PI: Linsey
- *REU: Collaborative Research: VisualizeIT - Measuring the Impact of IT-Enabled Concept Generation on Designer Creativity*, National Science Foundation, PI: McAdams, Co-PI: Linsey
- *SGER: Collaborative Research: VisualizeIT - Measuring the Impact of IT-Enabled Concept Generation on Designer Creativity*, National Science Foundation, PI: McAdams, Co-PI: Linsey

Courses Developed & Taught

MEEN 601: Advanced Product Design Fall 2008-2012
Graduate Class Project Sponsors 2009-2011: Halliburton & Alcoa, \$90,000

Courses Taught

MEEN 401: Introduction to Mechanical Engineering Design Spring 2008, 2010
MEEN 402: Intermediate Mechanical Engineering Design Spring 2009
ENGR 111: Foundations of Engineering I Fall 2010-2012, Spring 2011

Current Graduate Students Advised

Post-Doc G

1. Vimal Kumar Viswanathan

PhD

1. Olufunmilola (Funmi) Atilola, *Representation in Engineering*, PhD expected 2014
2. Michael Glier, *Bioinspired Design*, PhD expected 2013, co-chair: Dr. Daniel McAdams
3. Joanna Tsenn, *Measurement and Evaluation of Emerging Formal Methods for Bioinspired Engineering Design*, PhD expected 2014, co-chair: Dr. Daniel McAdams

MS

1. Peter Ngo, *MAPS*, expected December 2013

Former Graduate Students Advised

PhD

1. Vimal Viswanathan, *Cognitive Effects of Physical Models in Engineering Idea Generation*, PhD December 2012

MS

2. Nicole Esposito, *Principles of Green Design: Developing a Framework for Product Testing*, December 2012
3. Angel Perez, *Identifying Product Scaling Principles*, August 2011
4. Ricardo Lopez, *Characterizing the Effects of Noise and Domain Distance in Analogous Design*, May 2011
5. Edgar Oriakhi, *Design by Analogy using the WordTree Method and an Automated WordTree Generation Tool*, May 2011, co-chair Xiabo Peng (TAMU-Prairie View)
6. Vimal Kumar Viswanathan, *Physical Models in the Idea Generation Process*, MS December 2010
7. Ram Diwakaran, *Analyzing the Effects of Incentives and Model Attributes on CAD Model Creation and Alteration*, December 2010, chair: Dr. Michael Johnson, co-chair: Dr. Julie Linsey
8. Apeksha Gadwal, *Exploring Two Phases of Design-by-Analogy, "Multiple Solutions" and "Multiple Analogies"*, August 2010
9. Susanne Schmidt, *Globally Dispersed Engineering Teams in Computational Fluid Dynamics and in Product Development*, August 2010, co-chair: Dr. Daniel McAdams

Undergraduate Honors

- Nicole Esposito, *Principles of Green Design: Analyzing User Activities and Product Feedback*, expected August 2010

Invited Workshop Participant

- Exploring How People Learn Engineering, August 2-4, 2010, Golden, CO
- 2009 NSF CAREER Proposal Writing Workshop, March 12-13, 2009, Arlington, VA
- NSF Design Workshop — Spanning Design Boundaries, April 16-17, 2009 Northwestern University, Evanston, IL
- NSF Design Workshop — Design as a Discipline, November 6-7, 2008, Ann Arbor, MI
- NSF Cyberinfrastructure and Engineering Education Workshop, September 4-5, 2008, Washington D.C.

Professional Affiliations

- Society of Women Engineers: Member
- Society of Mechanical Engineers: Member
- American Society for Engineering Education: Member
- Design Society: Associate Member

Industrial Experience

Creo Consulting

Mechanical Engineer

- Part of a team that designed a test system for evaluating oil well tool seals

2/2005-8/2005

Austin, Texas

Agilent Technologies- Manufacturing Test Business Unit

6/2001-7/2002

R&D Hardware Engineer

Loveland, Colorado

- Mechanical design of new products for Agilent 3070 circuit board testers
- Mechanical testing for new products including mechanical function, thermal, and packaging
- Finite element and tolerance analysis
- Promoted from R&D Hardware Engineer Entry to R&D Hardware Engineer Career
- Design work resulted in two patents

Agilent Technologies- Manufacturing Test Business Unit

5/2000-8/2000

Summer Intern

Loveland, Colorado

- Designed a lever mechanism to insert and extract pc boards from a backplane.

General Motors Corporation

5/1999-8/1999

Summer Intern

Lansing, Michigan

- Designed and tested a tool to reduce the ergonomic injury resulting from installing self-drilling screws
- Evaluated, tested, and implemented employee suggestions for manufacturing quality improvements
- Reduced the number of body side moldings that were coming loose as a result of poor process