

CURRICULUM VITAE

KIRSTEN R. BUTCHER

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EDUCATION

- Ph.D., Cognitive Psychology & Cognitive Science** 1999 - 2003
University of Colorado at Boulder
Department of Psychology and Institute of Cognitive Science
Advisor: Walter Kintsch
- M.A., Cognitive Psychology** 1997 - 1999
University of Colorado at Boulder
Department of Psychology and Institute of Cognitive Science
Advisor: Walter Kintsch
- B.A., Psychology, *summa cum laude*** 1993 - 1997
Whitman College, Walla Walla, Washington

ACADEMIC POSITIONS

- Associate Professor, Department of Educational Psychology, University of Utah** 2014 - present
Programs: Instructional Design & Educational Technology, Learning Sciences
- Director, Instructional Design and Educational Technology (IDET) Program** 2014 - present
Department of Educational Psychology, College of Education, University of Utah
- Director, Center for the Advancement of Technology in Education (CATE)** 2012 - present
College of Education, University of Utah
- Assistant Professor, Department of Educational Psychology, University of Utah** 2008 - 2014
Programs: Instructional Design & Educational Technology, Learning Sciences
- Postdoctoral Research Fellow, Learning & Cognition/Educational Technology** 2005-2008
University of Pittsburgh
Learning Research & Development Center (LRDC); Pittsburgh Science of Learning Center. Mentors: Michelene T.H. Chi (University of Pittsburgh), Vincent Aleven (Carnegie Mellon)
- Postdoctoral Fellow, Science Visualization and Digital Library Research** 2003 - 2005
University Corporation for Atmospheric Research (UCAR)
& the National Center for Atmospheric Research (NCAR)
Digital Library for Earth Systems Education (UCAR) & Visualization and Enabling Technologies Section (NCAR). Mentors: Mary Marlino, Tamara Sumner (CU Boulder), Don Middleton, Tim Scheitlin

INDUSTRY EXPERIENCE

- Human Factors and User Experience Researcher, Lextant Corporation, Boulder, CO. 2001
- Design and Usability Group: Researcher, US West Advanced Technologies, Boulder, CO. 2000

RESEARCH INTERESTS

- Comprehension and Learning
- Visual Representations, Multimedia, and Cyberlearning

CURRICULUM VITAE

Design, Development, and Assessment of Educational Technology
Complex Cognitive Processes: inference, integration, transfer, mental model development
Human Computer Interaction and User Experience Design

GRANTS

FUNDED GRANTS: NATIONAL FUNDING AGENCIES/CENTERS

- PI: David Johnson, Co-PI: **Kirsten R. Butcher**. *NSF IIS: Cyberlearning: Transforming Education*. Award #IIS-1217301. EXP: Deepening Conceptual Understanding with Hands-on, Augmented-Reality Experimentation. **\$524,051**. 2012-2016
- PI: **Kirsten R. Butcher**. *NSF DUE: National STEM Education Distributed Learning (NSDL)*. Award # DUE-1043717. Collaborative Project: Understanding Impact: A Scaling and Replication Study of the Curriculum Customization Service. **\$47,001**. 2010-2012
- PI: **Kirsten R. Butcher**. Co-PIs: Anne Cook, Robert Zheng. *NSF DUE: National STEM Education Distributed Learning (NSDL)*. Award # DUE-0938041. Is there an educational advantage to NSDL? Assessing impact on cognitive processes and learning outcomes during resource selection and use. **\$328,905**. 2009-2013
- PI: **Kirsten R. Butcher**. *NSF DRL, Research and Evaluation on Education in Science and Engineering (REESE)*. Award # DRL-0835454. Collaborative Research: Enabling Robust Learning with Conceptual Personalization Technologies. **\$145,558**. 2009-2014
- PI: Vincent Aleven, Co-PIs: Ryan Baker, **Kirsten Butcher**, Hao Cen, Ron Salden. *Pittsburgh Science of Learning Center (NSF SBE-0354420)*: Geometry greatest hits: Optimizing student learning through synergistic techniques. **\$101, 861**. (University of Utah portion: \$33,538). 2009 - 2010
- PI: **Kirsten Butcher**, Co-PI: Vincent Aleven. *Pittsburgh Science of Learning Center (NSF SBE-0354420)*: Visual feature focus in geometry: Instructional support for visual coordination during learning. **\$133,553**. 2007 - 2008
- PI: Tamara Sumner, Co-PIs: James Martin, Mary Marlino, **Kirsten Butcher**. *NSF IIS, Advanced Learning Technologies*. Award # IIS-0537194: Supporting Science Understanding through a Customized Learning Service for Concept Knowledge. **\$504,815**. 2005 - 2008
- PI: Mary Marlino, Co-PI: **Kirsten Butcher**. *NSF IIS, Information Integration*. Award # IIS-0534515: Collaborative Research: Developing a Computational Model of "Quality" for Educational Digital Libraries. **\$144,811**. 2006 - 2008
- PI: Vincent Aleven, Co-PI: **Kirsten Butcher**. *Pittsburgh Science of Learning Center (NSF SBE-0354420)*: Robust learning in visual/verbal problem solving: Contiguity, integrated hints, and elaborated explanations. **\$294,304**. 2005 - 2007

FUNDED GRANTS: FOUNDATIONS

- PI: **Kirsten Butcher**. eScience Workspace (technology-supported physical science and engineering instruction). Castle Foundation. **\$4,500** 2016
- College of Education lead: Kirsten R. Butcher. Collaborative work with the Natural History Museum of Utah. *Advancing Critical Thinking: Developing an Innovative Approach to Enhancing Critical Thinking Skills in Young People*. Funding: Joseph and Evelyn Rosenblatt Charitable Fund and the IJ and Jeanné Wagner Foundation. Approximate subcontract funding to date: \$109,577. 2013 - present

FUNDED GRANTS: STATE AND UNIVERSITY

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- PI: Robert Zheng, Co-PIs: **Kirsten Butcher**, Paul Gore, A.J. Metz. *Utah System of Higher Education (USHE)*. Evaluation of UtahFutures.org. **\$50,000.** 2011
- PI: **Kirsten R. Butcher**, Co-PI: Robert Zheng. *University of Utah, College of Education Proposal Development Grants*. Using Interactive Multimedia to Develop Robust Scientific Thinking Skills. **\$3,875.** 2011
- PI: **Kirsten R. Butcher**. *University of Utah, University Research Council*. Learning with Interactive Educational Technology: New Methods for Self-Explanation? **\$5,950.** 2009 - 2010
- Subcontracts*
- Researcher: **Kirsten Butcher**. *Subcontract to Arizona State University*. Title: Learning with Visualizations: Engineering Education. **\$67,276.** 2010 - 2012
- Researcher: **Kirsten Butcher**. *Subcontract to Cornell University*. Title: Preserving and Enhancing NSF's Investment in NSDL. **\$49,999.** 2010 - 2011
- PI: Robert Zheng. Co-PI. **Kirsten R. Butcher**. *Subcontract to Utah Education Network*. Evaluation of the NetSafe Project. **\$29,750.** 2009 - 2011
- Researcher: **Kirsten Butcher**. *Subcontract to Cornell University*. Title: NSDL Technical Network Services: A cyberinfrastructure platform for STEM education. **\$74,944.** 2009 - 2010

ACADEMIC HONORS, AWARDS, AND NOMINATIONS

- University of Utah Presidential Scholar Award 2015-2018
- Best of NMC Award: New Media Consortium. Co-author Madlyn Runburg. Presentation: *Leveraging 3D technologies for learning* 2015
- Outstanding Volunteer Award, Utah FIRST LEGO League 2014
- Nominated for University of Utah, College of Education Research Award 2013
- Nominated for University of Utah, College of Education Teaching Award 2012
- Advanced Study Program Fellowship, National Center for Atmospheric Research 2003
- Psychology Department Service Award, University of Colorado, Boulder 2000
- Institute of Cognitive Science Travel Grant, University of Colorado, Boulder 1999
- Phi Beta Kappa, Whitman College 1997
- Outstanding Psychology Graduate Award, Whitman College. 1997

PUBLICATIONS

IN PREPARATION

- Butcher, K.R.**, Hudson, M., Runburg, M, and Lane, M. (in preparation). Research Quest: Using inquiry with digitized museum objects to promote critical thinking processes and outcomes.
- Butcher, K.R.**, Hudson, M., Runburg, M. (in preparation). Scaffolding critical thinking and scientific inquiry in middle school classrooms: 3D prints and virtual models as objects of investigation
- Son, S.C., Liang, L.A., & **Butcher, K.R.** (in preparation). The influence of interactive features in storybook apps on children's reading comprehension and story enjoyment.
- Butcher, K.R.**, Hudson, M., Davies, S., & Cook, A. (in preparation). Supporting effective user interaction during searching as learning: Scaffolding inquiry for users with varied domain expertise.
- Butcher, K.R.**, Son, S.C., & Liang, L.A. (in preparation). How and when do young readers interact with storybook apps?
- Butcher, K.R.**, Orr, M. (in preparation). Learner interactions with 3D objects during learning.

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- Dewald, A., & Butcher, K. R., (in preparation). Student learning during generation of peer explanation videos: Effects of learning goals and visual representations.
- Butcher, K.R.**, Davies, S., & Fazeli, N. (in preparation). Scaffolds for learning with STEM videos: Effects of cueing and comparison.
- Butcher, K. R.**, Dewald, A., Runburg, M., & Zheng, R. (in preparation). Using visual interaction to support elementary students' development and transfer of scientific observation skills.
- Butcher, K. R.**, & Davies, S. (in preparation). How visual interaction changes cognitive processing: Evidence from intelligent tutoring systems.
- Butcher, K. R.**, Davies, S. & Cook, A. E. (in preparation). Scaffolding searching as learning with a graphical organizer: Effects on cognitive processes and mental effort.
- Ferrara, L., & **Butcher, K. R.** (in preparation). Cueing in visual representations of feedback: What information do students utilize during self-regulated learning?

PEER-REVIEWED PUBLICATIONS

JOURNAL ARTICLES

- Leary, H., **Butcher, K. R.**, Devaul, H. (resubmitted). Impact of an ICT planning tool on student-centered technology integration: Converging evidence from teacher interviews, surveys, and weblog data.
- Butcher, K. R.**, Runburg, M., Hudson, M. (2017). Using digitized objects to promote critical thinking and engagement in classrooms. *Library High Tech News*, 34(7), 12-15.
- Butcher, K. R.**, Leary, H., Foster, J. & Devaul, H. (2014). Adopting an online curriculum planning tool: Facilitation for teachers' thinking about student-centered pedagogy and technology integration. *Journal of Technology and Teacher Education*, 22(4), 423-447.
- Johnson, A. M., **Butcher, K. R.**, Ozogul, G., & Reisslein, M. (2014). Introductory circuit analysis learning from abstract and contextualized circuit representations: Effects of diagram labels. *IEEE Transactions on Education*, 57 (3), 160-168.
- Butcher, K. R.**, Aleven, V. (2013). Using student interactions to foster rule-diagram mapping during problem solving in an intelligent tutoring system. *Journal of Educational Psychology*, 105(4), 988-1009.
- Wetzler, P., Bethard, S., Leary, H., **Butcher, K.**, Bahreini, S. D., Zhao, J., Martin, J., & Sumner, T. (2013). Characterizing and predicting the multi-faceted nature of quality in educational web resources. *Transactions on Interactive Intelligent Systems*, 3(3), Article 15 (15:1-15:25).
- Johnson, A. M., **Butcher, K. R.**, Ozogul, G., & Reisslein, M. (2013). Learning from abstract and contextualized representations: The effect of verbal guidance. *Computers in Human Behavior*, 29(6), 2239-2247.
- Ferrara, L., & **Butcher, K. R.** (2012). Understanding Feedback: Exploring Students' Perceived Needs and Ideas about Feedback in Online Learning Environments. *International Journal on Cyber Behavior, Learning, and Psychology*, 2(2), 48-70.
- Butcher, K. R.**, & Sumner, T. (2011a). How does prior knowledge impact students' online learning behaviors? *International Journal on Cyber Behavior, Learning, and Psychology*, 1 (4), 1-18.
- Butcher, K. R.**, & Sumner, T. (2011b). Self-directed learning and the sensemaking paradox. *Human Computer Interaction*, 26(1), 123-159. doi: <http://dx.doi.org/10.1080/07370024.2011.556552>.
- de la Chica, S., Ahmad, F., Sumner, T., Martin, J. H., & **Butcher, K.** (2008). Computational Foundations for Personalizing Instruction with Digital Libraries. *International Journal on Digital Libraries*, 9, 3-18.
- Caillies, S., & **Butcher, K. R.** (2007). Comprehension of idiomatic expressions: Evidence for a new hybrid view. *Metaphor and Symbol*, 22, 79-108.

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- Butcher, K. R.,** Bhushan, S., & Sumner, T. (2006). Multimedia displays for conceptual search processes: Information seeking with strand maps. *ACM Multimedia Systems Journal, 11*, 236-248.
- Butcher, K. R.** (2006). Learning From Text With Diagrams: Promoting Mental Model Development and Inference Generation. *Journal of Educational Psychology, 98*, 182-197.
- Butcher, K. R.,** & Kintsch, W. (2001). Support of content and rhetorical processes of writing: Effects on the writing process and written product. *Cognition and Instruction, 19*, 277-322.

CHAPTERS

- Butcher, K.R.,** Hudson, M., Runburg, M. (in press). Visualizations for deep learning: Using 3D models to promote scientific observation and reasoning during collaborative STEM inquiry. In Zheng, R., (ed.) *Strategies for deep learning with digital technology: Theories and practices in education*. Hauppauge, NY: Nova Science Publishers.
- Butcher, K.R.,** Runburg, M., Altizer, R. (2017). Dino Lab: Designing and developing a game for critical thinking. In Zheng, R., & Gardner, M. (eds.) *Handbook of research on serious games for educational applications* (pp. 115 – 148). IGI Global.
- Butcher, K.R.,** & Jameson, J. M. (2016). Computer-based instruction (CBI) within special education. In J. K. Luiselli and A. J. Fischer (Eds.), *Computer-Assisted and Web-Based Innovations in Psychology, Special Education, and Health* (pp. 211 – 254). Elsevier.
- Butcher, K.R.,** & Davies, S. (2015). Inference generation during online study and multimedia learning. In E.J. O'Brien, A.E. Cook, & R.F. Lorch (Eds.), *Inferences during Reading* (pp. 321 – 347). New York: Cambridge University Press.
- Butcher, K.R.** (2014). The multimedia principle. In R. E. Mayer (Ed.), *The Cambridge Handbook of Multimedia Learning, 2nd Edition* (pp. 174-205). New York: Cambridge University Press.
- Butcher, K.R.,** & Kintsch, W. (2012). Text comprehension and discourse processing. In A. F. Healy & R. W. Proctor (Eds.), *Experimental Psychology. Volume 4* in I. B. Weiner (Editor-in-Chief) *Handbook of psychology, 2nd Edition* (pp. 578-604). New York: Wiley.
- Butcher, K.R.,** & de la Chica, S. (2010). Supporting Student Learning with Adaptive Technology: Personalized Conceptual Assessment and Remediation. In M. Banich & D. Caccamise (Eds.), *Generalization of Knowledge: Multidisciplinary Perspectives* (pp. 297-330). Taylor & Francis.
- Butcher, K.R.,** de la Chica, S., Ahmad, F., Gu, Q., Sumner, T., & Martin, J. (2008). Conceptual Customization for Learning with Multimedia: Developing Individual Instructional Experiences to Support Science Understanding. In R. Zheng (Ed.), *Cognitive effects of multimedia learning* (pp. 260 – 287). Hershey, PA: IGI Global.
- Butcher, K. R.,** & Kintsch, W. (2003). Text Comprehension and Discourse Processing. In A. F. Healy & R. W. Proctor (Eds.), *Experimental Psychology* (pp. 575-595). Volume 4 in I. B. Weiner (Editor-in-Chief) *Handbook of psychology*. New York: Wiley.

CONFERENCE PROCEEDINGS

- Jensen, M., Casucci, T., Runburg, M., **Butcher, K. R.,** Brown, R., & Altizer, R. (2015). Research Quest: Critical thinking through video games and interdisciplinary collaboration. In *Proceedings of the 10th International Conference on the Foundations of Digital Games (FDG 2015)*. Available online: http://www.fdg2015.org/papers/fdg2015_extended_abstract_24.pdf
- Davies, S., **Butcher, K.,** & Stevens, C. (2013). Self-regulated learning with graphical overviews: When spatial information detracts from learning. In M. Knauff, M. Pauen, N. Sebanz, & I. Wachsmuth (Eds.),

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Proceedings of the 35th Annual Conference of the Cognitive Science Society (pp. 2136 – 2141). Austin, TX: Cognitive Science Society.

- Butcher, K.**, Ferrara, L., & Devaul, H. (2013). Teachers' use of an online curriculum planning tool: Usage patterns associated with student learning. *Proceedings of EdMedia 2013: World Conference on Educational Media & Technology*. Chesapeake, VA: AACE.
- Ozogul, G., Johnson, A. M., & Reisslein, M., & **Butcher, K.** (2012). Representation guidance with abstract and contextualized representation: Effects on engineering learning performance in technology literacy education. *Proceedings of the ASEE Annual Conference, 2012*. Available online: <http://www.asee.org/public/conferences/8/papers/3625/view>
- Butcher, K. R.**, Davies, S., Crockett, A., Dewald, A., & Zheng, R. (2011). Do graphical search interfaces support effective search for and evaluation of digital library resources? *Proceedings of the 11th annual international ACM/IEEE-CS Joint Conference on Digital Libraries (JCDL '11)* (pp. 315-324). New York: Association for Computing Machinery.
- Ferrara, L., & **Butcher, K. R.** (2011). Visualizing feedback. Using graphical cues to promote self-regulated learning. In L. Carlson, C. Hölscher, & T. Shipley (Eds.), *Proceedings of the 33rd Annual Conference of the Cognitive Science Society* (pp. 1880-1885). Austin, TX: Cognitive Science Society.
- Butcher, K. R.** (2010). How diagram interaction supports learning: Evidence from think alouds during intelligent tutoring. In A. Goel, M. Jamnik, & N. H. Narayanan (Eds.), *Diagrammatic Representation and Inference: Lecture Notes in Computer Science, Volume 6170* (pp. 295-297). Berlin/Heidelberg: Springer.
- Butcher, K. R.**, & Aleven, V. A. (2010). Learning during intelligent tutoring: When do integrated visual-verbal representations improve student outcomes? In S. Ohlsson & R. Catrambone (Eds.), *Proceedings of the 32nd Annual Conference of the Cognitive Science Society* (pp. 2888 – 2893). Austin, TX: Cognitive Science Society.
- Butcher, K. R.**, Sumner, T., Maull, K., & Okoye, I. (2010). Conceptual personalization technology: Promoting effective self-directed, online learning. In V. Aleven, J. Kay & J. Mastow (Eds.), *Lecture Notes in Computer Science 6095: Intelligent Tutoring Systems Conference, 2010, Part II* (pp. 278-280). Berlin: Springer-Verlag.
- Sumner, T., **Butcher, K. R.**, & Wetzler, P. (2010). Open educational resource assessments (OPERA). In V. Aleven, J. Kay & J. Mastow (Eds.), *Lecture Notes in Computer Science 6095: Intelligent Tutoring Systems Conference, 2010, Part II* (pp. 414-416). Berlin: Springer-Verlag.
- Bethard, S., Wetzler, P., **Butcher, K. R.**, Martin, J. H., Sumner, T. (2009). Automatically characterizing resource quality for educational digital libraries. In *Proceedings of the 9th ACM/IEEE Joint Conference on Digital Libraries, JCDL '09* (pp. 221-230). ***Winner: JCDL 2009 Vannevar Bush Best Paper Award***
- Wetzler, P., Bethard, S., **Butcher, K.**, Martin, J. H., & Sumner, T. (2009). Automatically assessing resource quality for educational digital libraries. In *Proceedings of the 3rd ACM Workshop on Information Credibility on the Web: WICOW '09I* (pp. 3-10). Madrid: ACM Press.
- Gu, Q., de la Chica, S., Ahmad, F., Khan, H., Sumner, T., Martin, J.H., & **Butcher, K.** (2008). Personalizing the selection of digital library resources to support intentional learning. In B. Christensen-Dalsgaard et al. (Eds.), *ECDL 2008, Lecture Notes in Computer Science 5173: Research and Advanced Technology for Digital Libraries* (pp. 244-255). Berlin: Springer-Verlag.
- Butcher, K.R.**, & Aleven, V. A. (2008). Diagram Interaction during Intelligent Tutoring in Geometry: Support for Knowledge Retention and Deep Understanding. In B. C. Love, K. McRae, & V. M. Sloutsky (Eds.), *Proceedings of the 30th Annual Conference of the Cognitive Science Society* (pp. 1736-1741). Austin, TX: Cognitive Science Society.

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- Butcher, K.,** & Aleven, V. (2007). Integrating visual and verbal knowledge during classroom learning with computer tutors. In D.S. McNamara & J.G. Trafton (Eds.), *Proceedings of the 29th Annual Cognitive Science Society* (pp. 137-142). Austin, TX: Cognitive Science Society.
- Ahmad, F., de la Chica, S., **Butcher, K.,** Sumner, T. R., & Martin, J. H. (2007). Towards Automatic Conceptual Personalization Tools. In E. Rasmussen, R. Larson, E. Toms, & S. Sugimoto (Eds.), *ACM/IEEE Joint Conference on Digital Libraries, JCDL '07*. (pp. 452 – 461). Vancouver, BC: ACM Press
- Butcher, K. R.,** & Bhushan, S. (2005). Using strand maps to engage digital library users with science content. *Proceedings of the 5th ACM/IEEE-CS joint conference on digital libraries*, p. 371. New York: Association for Computing Machinery.
- Butcher, K. R.,** & Kintsch, W. (2004). Learning with diagrams: Effects on inferences and the integration of information. In A. Blackwell, K. Marriott, & A. Shimojima (Eds.), *Lecture notes in artificial intelligence 2980: Diagrammatic representation and inference* (pp. 337-340). New York: Springer.

OTHER PUBLICATIONS

- Butcher, K. R.** (2003). Cognitive approaches to assessing the impact of digital libraries. Available online: http://eduimpact.comm.nsdlib.org/evalworkshop/_butcher.php
- Sumner, T., Marlino, M., & **Butcher, K.** (2003). Developing a Strategy for Evaluating the Educational Impact of NSDL. Preliminary Report on the NSDL Workshop: Evaluation Educational Impact. October 2-3, 2003: Washington DC. Available online: http://swiki.dlese.org/nsdl2003/uploads/42/Preliminary_Report_from_the_NSDL_Workshop.doc
- Giersch, S., **Butcher, K.,** & Reeves, T. (2003). Annotated Bibliography of Evaluating the Educational Impact of Digital Libraries. Available online: http://eduimpact.comm.nsdlib.org/evalworkshop/eval_ann-bib_09-29-03.doc

PRESENTATIONS

CONFERENCE PAPERS (PEER-REVIEWED WITHOUT PROCEEDINGS)

- Liang, L. A., Son, S.C., **Butcher, K. R.,** & Neslon, E. T. (2018, March). Reviewing storybook apps: A framework for consideration of interactive features. Paper presented at the meeting of the *Georgia Conference on Children's Literature*. Athens, GA.
- Dewald, A., & **Butcher, K. R.,** (2018, April). Do interactive domain overviews promote deep understanding in an ill-structured domain? Paper presented at the *American Educational Research Association Annual Meeting (AERA 2018)*. New York, NY.
- Leary, H., & **Butcher, K. R.** (2018, April). Impact of an ICT planning tool on student-centered technology integration. Paper presented at the *American Educational Research Association Annual Meeting (AERA 2018)*. New York, NY.
- Orr, M., **Butcher, K. R.,** Davies, S. (2018, April). Do erroneous explanations hinder learning? Evidence from physics. Paper presented at the *American Educational Research Association Annual Meeting (AERA 2018)*. New York, NY.
- Poitras, E., **Butcher, K. R.,** Hudson, M. (2018, April). Subgroup mining of learning behaviors with interactive diagrams in Research Quest. Paper presented at the *American Educational Research Association Annual Meeting (AERA 2018)*. New York, NY.

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- Butcher, K. R.,** Hudson, M., & Runburg, M. (2017, April). Critical thinking in the classroom using 3-D models of museum objects. Paper presented at the *American Educational Research Association Annual Meeting (AERA 2017)*. Austin, TX.
- Orr, M., **Butcher, K. R.,** & Verma, S. (2017, April). Multimedia materials for patient education increase confidence and explanation quality. Paper presented at the *American Educational Research Association Annual Meeting (AERA 2017)*. Austin, TX.
- Poitras, E., **Butcher, K. R.,** & Hudson, M. (2017, April). Mining sequential patterns in student collaborative dialogue while learning from Research Quest. Paper presented at the *American Educational Research Association Annual Meeting (AERA 2017)*. Austin, TX.
- Butcher, K. R.,** & Fazeli, N. (2016, April). Scaffolding video explanation using cueing and comparison. Paper presented at the *American Educational Research Association Annual Meeting (AERA 2016)*. Washington, DC.
- Ferrara, L., & **Butcher, K. R.** (2015, April). Promoting deep learning through use of effective self-regulated learning strategies in online learning. Paper presented at the *American Educational Research Association Annual Meeting (AERA 2015)*. Vancouver, Canada.
- Ferrara, L., & **Butcher, K. R.** (2015, April). Using constructive graphical organizers to improve online self-regulated learning outcomes. Paper presented at the *American Educational Research Association Annual Meeting (AERA 2015)*. Vancouver, Canada.
- Ferrara, L., & **Butcher, K. R.** (2012, April). Can feedback visualization promote metacognitive awareness of revisions? Paper presented at the *American Educational Research Association Annual Meeting (AERA 2012)*. Vancouver, Canada.
- Zheng, R., **Butcher, K. R.,** & Callister, P. (2011, April). Enhancing collaborative learning outcomes during video instruction: Deep prompts support knowledge retention and transfer. Paper presented at the *American Educational Research Association Annual Meeting (AERA 2011)*. New Orleans, LA.
- Ferrara, L. A., & **Butcher, K. R.,** (2010, May). *Does pretraining format predict learning with educational technology?* Paper presented at the annual meeting of the American Educational Research Association 2010, Denver, CO.
- Butcher, K. R.,** & Aleven, V. A. (2009, August). Visual self-explanation during intelligent tutoring? More than attentional focus? Paper presented at the *13th biennial conference of the European Association for Research on Learning and Instruction (EARLI)*, Amsterdam, Netherlands.
- Butcher, K. R.,** & Chi, M. T. H. (2006, August). *How can diagrams scaffold text comprehension?* Paper presented at the EARLI SIG2 Meeting 2006, University of Nottingham, Nottingham, UK.

TALKS AND POSTERS

- Butcher, K. R.** (2018, February). *Online assessments as tools for deep learning.* Talk presented at the ITC eLearning Conference, 2018. February 11-14, 2018, Tucson, AZ.
- Runburg, M., **Butcher, K.R.,** Lane, M. (2017, March). *Integrating real-world science, NGSS three dimensions of learning, and technology to promote critical thinking, collaboration, and communication.* Session presented at National Science Teachers Association Annual Meeting, 2017. March 28 – April 2, Los Angeles, CA.
- Butcher, K. R. (2017, March). *Robotics for elementary education.* Spotlight talk presented at the annual conference of the Utah Coalition for Educational Technology (UCET 2017). March 16-17, Salt Lake City, UT.

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- Liang, L. A., Son, S. C., & Butcher, K. R. (2017, March). *Storybook apps for early elementary*. Talk presented at the annual conference of the Utah Coalition for Educational Technology (UCET 2017). March 16-17, Salt Lake City, UT.
- Butcher, K. R., Runburg, M., & Lane, M. (2017, March). *NHMU Research Quests: 3D and Inquiry*. Talk presented at the annual conference of the Utah Coalition for Educational Technology (UCET 2017). March 16-17, Salt Lake City, UT.
- Levitt-Bussian, C. G., Runburg, M., **Butcher, K.R.**, Lane, M., Toth, N. (2016, October). *Diverse Approaches to Paleo Outreach Programs: Ideas, Strategies, and Logistics*. Workshop presented at Society of Vertebrate Paleontology Annual Meeting, 2016. October 26-29, Salt Lake City, UT.
- Butcher, K. R.**, (2016, March). *Embedding Effective Questions in Videos*. Presentation at Utah Coalition for Educational Technology Annual Meeting (UCET 2016). March 17-18. Salt Lake City, UT.
- Butcher, K. R.**, & Runburg, M. (2016, March). *Advancing Critical Thinking: Online Inquiry with NHMU Objects*. Presentation at Utah Coalition for Educational Technology Annual Meeting (UCET 2016). March 17-18. Salt Lake City, UT.
- Butcher, K. R.**, (2016, March). *Is a 3D print worth 1000 words?* IGNITE presentation, Utah Coalition for Educational Technology Annual Meeting (UCET 2016). March 17-18. Salt Lake City, UT.
- Butcher, K. R.**, & Davies, S. (2016, February). *Using videos of hands-on experiments for distance learning in science*. Presentation at eLearning 2016. February 14-17, Scottsdale, AZ.
- Levitt-Bussian, C. G., Runburg, M., **Butcher, K. R.**, Collins, T., & Hudson, M. (2015, October). *Leveraging paleontology research, collections, and 3D technologies to promote critical thinking*. Poster presented at the 75th Annual Meeting of the Society of Vertebrate Paleontology. October 14-17, Dallas, TX.
- Hudson, M., Davies, S., **Butcher, K. R.**, & Cook, A. E. (2015, July). *Using essays to evaluate learning: Results from human and computerized scoring approaches*. Poster presented at the 25th Annual Meeting of the Society for Text & Discourse. July 6-8, Minneapolis, MN.
- Butcher, K. R.**, & Runburg, M. (2015, June). *Leveraging 3D technologies for learning*. New Media Consortium Summer Conference. June 10-11, Washington, DC.
- *** Best of NMC Award (“Best in Show”)**
- Butcher, K. R.** (2015, April). *Using learning theory to write better questions*. Utah Coalition for Educational Technology Annual Meeting (UCET 2015). April 2-3, Herriman, UT.
- Butcher, K. R.** (2015, April). *Tools and apps for assessment*. Utah Coalition for Educational Technology Annual Meeting (UCET 2015). April 2-3, Herriman, UT.
- Dewald, A., & **Butcher, K. R.** (2015, April). *Flipped classrooms: Designing and implementing*. Utah Conference on Educational Technology (UCET) 2015. April 2-3, Herriman, UT.
- Ferrara, L., & **Butcher, K. R.** (2014, April). *Choosing apps for optimal learning*. Utah Coalition for Educational Technology Annual Meeting (UCET 2014). April 3-4, Murray, UT.
- Davies, S., **Butcher, K. R.**, & Cook, A. (2013, August). *Graphical overviews structure online learning: Evidence from eye tracking*. Poster presented at the 35th annual meeting of the Cognitive Science Society, Berlin, Germany.
- Butcher, K. R.**, & Ferrara, L. (2013, August). *Supporting self-regulated learning in conceptual feedback environments*. Poster presented at the 35th annual meeting of the Cognitive Science Society, Berlin, Germany.
- Ferrara, L., & **Butcher, K. R.** (2013, July). *Using graphical organizers to improve self-regulated learning: Constructive activities enhance deep learning with online materials*. Poster presented at the 35th annual meeting of the Cognitive Science Society, Berlin, Germany.

CURRICULUM VITAE

- Butcher, K. R.**, Indahl, T., & Devaul, H. (2013, April). *Assessing factual knowledge vs. deep understanding of science concepts using visually-based assessment items?* Poster presented at the annual meeting of the American Educational Research Association 2013, San Francisco, CA.
- Ye, L., Walker, A., Recker, M., Leary, H., Devaul, H., **Butcher, K.**, & Sumner, T. (2013, April). *Integrating Technology, Curriculum, and Online Resources: A Multilevel Model Study of Impacts on Science Teachers and Students.* Poster presented at the annual meeting of the American Educational Research Association 2013, San Francisco, CA.
- Butcher, K. R.** (2013, March). *Using photos and videos for deeper learning.* Talk presented at the Utah Coalition for Educational Technology (UCET 2013), Jordan High School, Sandy, UT.
- Butcher, K. R.** (2012, March). *Visual multimedia for learning: What, when, and how?* Talk presented at the Utah Coalition for Educational Technology (UCET 2012), Jordan High School, Sandy, UT.
- Dewald, A., & **Butcher, K. R.** (2012, March). *Using Google apps to create a deeper learning experience for students.* Talk presented at the Utah Coalition for Educational Technology (UCET 2012), Jordan High School, Sandy, UT.
- Butcher, K. R.**, Davies, S., Crockett, A., Zheng, R., Dewald, A., & Cook, A. (2011, July). *Graphical search interfaces for online information seeking.* Poster presented at the 33rd Annual Conference of the Cognitive Science Society. Boston, MA.
- Zheng, R., Butcher, K. R., Gupta, U., & Callister, P. (2011, July). *Prompting effective collaboration using deep questions.* Poster presented at the 33rd Annual Conference of the Cognitive Science Society. Boston, MA.
- Butcher, K. R.**, Crockett, A., & Davies, S. (2011, June). *Representing educational content in digital library resources.* Poster presented at the Joint Conference on Digital Libraries (JCDL 2011). Ottawa, Canada. Published in *Proceedings of the 11th annual international ACM/IEEE-CS joint conference on digital libraries*, doi: <http://dx.doi.org/10.1145/1998076.1998174>
- Butcher, K.R.**, & Zheng, R. (2011, March). *Using the National Science Digital Library in teacher preparation: Research findings and practical strategies.* Talk presented at the Utah Coalition for Educational Technology Annual Conference (UCET 2011), Jordan High School, Sandy, UT.
- Dewald, A., **Butcher, K.**, & Zheng, R. (2011, March). *Developing interactive multimedia to enhance elementary students' critical thinking in science.* Talk presented at the Utah Coalition for Educational Technology Annual Conference (UCET 2011), Jordan High School, Sandy, UT.
- Zheng, R., **Butcher, K.**, Callister, P., & Gupta, U. (2011, March). *Strategies for increasing student learning with online videos: Findings from a NetSafe study.* Talk presented at the Utah Coalition for Educational Technology Annual Conference (UCET 2011), Jordan High School, Sandy, UT.
- Butcher, K.**, Foster, J. (2010, November). A cognitive interview protocol for assessing changes in teacher knowledge. Talk presented at the *National Science Digital Library Annual Meeting (NSDL 2010)*. Washington, DC.
- Butcher, K.**, Davies, S., Mazal, A., Dewald, A., Zheng, R., & Cook, A. (2010, November). Helping preservice teachers find and evaluate digital resources for the classroom: Can educational digital libraries help? Talk presented at the *National Science Digital Library Annual Meeting (NSDL 2010)*. Washington, DC.
- Butcher, K. R.**, Zheng, R., Cook, A., Crockett-Mazal, A., & Davies, S. (2010, November). *What do preservice teachers find when using NSDL vs. Google: An analysis using the ADMIRE rubric.* Poster presented at the National Science Digital Library Annual Meeting (NSDL 2010). Washington, DC.
- Butcher, K. R.**, Zheng, R., Cook, A., Ferrara, L., Davies, S., Crockett-Mazal, A., & Dewald, A. (2010, August). *Facilitating educator evaluation of online instructional materials: Does conceptual browsing impact*

CURRICULUM VITAE

cognitive processing? Poster presented at the 32nd Annual Conference of the Cognitive Science Society. Portland, OR.

- Butcher, K. R.,** & Sumner, T. (2010, May). *What predicts learning with web resources? Relationships between prior knowledge, approaches to online learning, and learning outcomes.* Poster presented at the annual meeting of the American Educational Research Association 2010, Denver, CO.
- Butcher, K.R.,** Sumner, T., Martin, J., & Devaul, H. (2010, March). *Personalization technology: Supporting cognitive and metacognitive processes during learning.* Poster presented at the REESE annual PI meeting, Washington, DC.
- Sumner, T., Martin, J., **Butcher, K.,** & Devaul, H. (2010, March). *A personalized learning environment.* Poster presented at the REESE annual PI meeting, Washington, DC.
- Butcher, K.R.,** & Zheng, R. (2010, February). *Is there life beyond Google? Using digital libraries to find educational resources for the classroom.* Talk presented at the Utah Coalition for Educational Technology Annual Conference (UCET 2010), Murray High School, Salt Lake City, UT.
- Zheng, R., & **Butcher, K. R.** (2010, February). Design and develop effective learning resources to support K-12 education: A panel discussion. Talk presented at the Utah Coalition for Educational Technology Annual Conference (UCET 2010), Murray High School, Salt Lake City, UT.
- de la Chica, S., Ahmad, F., Gu, Q. Okoye, I., Maull, K., Sumner, T., & **Butcher, K. R.** (2009, June). A personalized learning environment. Poster session presented at the Joint Conference on Digital Libraries (JCDL 2009). Austin, TX. Published in *Proceedings of the 9th annual international ACM/IEEE-CS joint conference on digital libraries*, doi: 10.1145/1555400.1555467
- Butcher, K.R.,** Zheng, R., & Cook, A. (2009, November). Is there an educational impact of NSDL? Studying users' cognitive processes and learning outcomes. Poster session presented at the Annual Meeting of the National Science Digital Library, Washington, DC.
- Butcher, K.R.** (2008, September). Visual interaction and robust learning. Talk presented at the International Workshop on Spatial Cognition and Learning, University of Freiburg, Freiburg, Germany.
- Butcher, K. R.,** & Aleven, V. A. (2008, April). Visual interaction in intelligent tutoring: Support for robust learning. Research presentation for visiting educators and officials from Singapore's Ministry of Education, Carnegie Mellon University, Pittsburgh, PA.
- Butcher, K. R.,** & Aleven, V. A. (2008, March). Concept training and deep knowledge assessment: Using CTAT in the classroom. Poster session presented at the Open Learning Interplay Symposium 2008, Carnegie Mellon University, Pittsburgh, PA.
- Butcher, K. R.,** & Aleven, V. A. (2008, January). Learning from visual-verbal sources in intelligent tutoring. Paper presented at the Inter-Science of Learning Center Conference (ISLC), Carnegie Mellon University, Pittsburgh, PA.
- Butcher, K. R.,** & Aleven, V. A. (2007, October). Visual-verbal coordination: Diagram interaction promotes robust learning in geometry. Poster session presented at the Science of Learning Centers Annual Meeting, Arlington, VA.
- Aleven, V., Evenson, S., & **Butcher, K. R.** (2006, April). *Improved Interaction Design in a Cognitive Tutor for Geometry.* Poster session presented at Carnegie Mellon University's Human-Computer Interaction Institute 12th Anniversary Celebration, Pittsburgh, PA.
- Butcher, K. R.,** & Bhushan, S. (2005, June). *Using Strand Maps to Engage Digital Library Users with Science Content.* Poster session presented at the Joint Conference on Digital Libraries 2005, Denver, CO.

CURRICULUM VITAE

- Butcher, K. R.** (2005, April). *Learning with scientific visualizations: Effects of background knowledge and interactivity*. Poster session presented at the annual meeting of the American Educational Research Association 2005, Montreal, Canada.
- Butcher, K. R., & Kintsch, W.** (2004, March). *Learning with diagrams: Effects on inferences and the integration of information*. Poster session presented at Diagrams 2004, University of Cambridge, Cambridge, UK.
- Butcher, K. R. & Pandya, R.** (2004, February). *Preliminary Data on Student Learning with VGEE (The Visual Geophysical Exploration Environment)*. Poster session presented at the National Science Foundation Cutting Edge Workshop: Teaching Geoscience with Visualizations: Using Images, Animations, and Models Effectively, Carleton College, Northfield, MN.
- Greene, L., Boyko, M., Susnowitz, S., **Butcher, K. R.**, Kintsch, E., & Kintsch, W. (1998, December). *Introducing Science WRITE*. Poster session presented at the International Conference of the Learning Sciences, Atlanta, Georgia.

INVITED TALKS

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| Utah Valley University Instructional Design Summit, Keynote talk. (Title: "Designing Digital Assessments for Deep Learning") | 2017 |
| Center for Teaching & Learning Excellence, Faculty Boot Camp, University of Utah (Title: "Using HCI & Learning Science to Improve Digital Organization and Online Assessment") | 2017 |
| Center for Teaching & Learning Excellence, Graduate Student Teaching Workshop Series, University of Utah (Title: "Learning to Develop Effective Outreach") | 2017 |
| Faculty Seminar Series, Molecular Biology Umbrella Program, University of Utah (Title: "Transforming Teaching using Cognitive Science") | 2015 |
| Research Administration NAKAMA Series, University of Utah | 2013 |
| J. Willard Marriott Library: Information Visualization Lecture Series | 2013 |
| POGIL (Process Oriented Guided Inquiry Learning) Southwest Regional Workshop: Plenary speaker | 2012 |
| Utah Futures Executive Steering Committee, Utah State Capitol | 2011 |
| Utah State University | 2010 |
| Brain, Mind, Learning (Scientific Symposium Session): Society for the Advancement of Native Americans & Chicanos in Science (SACNAS) | 2008 |
| Indiana University, Bloomington | 2007 |
| Kent State University | 2007 |
| University of Pittsburgh | 2005 |
| Carnegie Mellon University | 2005 |
| University of Memphis | 2005 |

ADVISORY BOARD / EXPERT PANEL MEMBERSHIPS & INVITATIONS

- Advisory Board Member.** Meta-Analysis to Support an Integrated Theory of Multimedia Learning: An ECR Synthesis Proposal. PI: Jennifer Cromley (University of Illinois at Urbana-Champaign). NSF ECR grant project. 2017 - current
- National Advisory Team.** Advancing Critical Thinking Project, Natural History Museum of Utah (NHMU). 2013 - current

CURRICULUM VITAE

- Advisory Board Member.** Improving search, sensemaking, learning, and social tagging through a universal appliance for query expansion and meaningful concept displays. *Institute of Museum and Library Services: National Leadership Grant for Libraries.* PI: Xia Lin (Drexel University); co-PIs: Dagobert Soergel (University at Buffalo), Murtha Baca (Getty Research Institute), William Yang (ARTstor) 2011 - 2014
- Advisory Board Member.** Fostering more effective use of the learning progressions in NSDL Science Literacy Maps. *NSF DUE # 1043169.* PI: Francis Molina (American Association for the Advancement of Science: AAAS); co-PIs: Jo Ellen Roseman (AAAS), Mary Koppal (AAAS) 2011 - 2013
- Advisory Board Member.** Edited Book: Zheng, R., Hill, R., & Gardner, M. (eds.) (2012). Engaging older adults with modern technology: Internet use and information. Hershey, PA: IGI Global Publisher. 2011
- External Evaluator.** Robust and efficient learning: Modeling and remediating students' domain knowledge. *NSF, DRL # 0910188.* PI: Albert Corbett (Carnegie Mellon University); co-PIs: Ryan Baker (Worcester Polytechnic Institute), Aaron Mitchell (Carnegie Mellon University) 2010 - 2013
- Advisory Board Invitation.** Design Characteristics of Effective Online Professional Development: Tools to Support the Common Core State Standards for Geometry. PI: Nanette Seago (WestEd). *Grant submitted to the Institute of Education Sciences.* Grant Declined
- Advisory Board Invitation.** Efficacy study on the impact of interactive white board technology. PI: Steve Schneider (WestEd STEM Program). *Grant submitted to the Institute of Education Sciences.* Grant Declined
- Advisory Board Invitation.** Celebrated frogs: Natural science education through the lens of domestic amphibian declines. *Grant submitted to the National Science Foundation: Informal Science Education.* PI: Kenning Arlitsch (University of Utah); co-PIs: Jeff Rice (University of Utah), Laura Hunter (Utah Education Network) Grant Declined
- Advisory Board Invitation.** Fostering pedagogical content knowledge in weather and climate through online professional development. *Grant submitted to the National Science Foundation Discovery Research K-12.* PI: Francis Molina (AAAS); co-PIs: Ted Willard (AAAS), Mary Koppal (AAAS), Robert Steiner (AMNH), Al Byers (NSTA) Grant Declined
- Advisory Board Invitation.** Understanding faculty learning through the NSDL: A case study using 'Teach the Earth.' *Grant submitted to the National Science Foundation: National STEM Distributed Learning.* PI: Cathy Manduca (Carleton College). Grant Declined

TEACHING EXPERIENCE

- Advanced Instructional Design (EDPS 6431).* Educational Psychology. 2014 – current
Undergraduate/Graduate Course. University of Utah.
- Educational Applications of Technology (Grades 6-12): Mathematics (EDPS 5151 / 6151).* 2014
Educational Psychology. Undergraduate/Graduate Course. University of Utah.
- Learning with Visual Multimedia and External Representations (EDPS 7851).* Educational Psychology. Graduate Seminar. University of Utah. 2013 - current
- Integrating Technology II: Science (EDPS 5442/6442).* Educational Psychology, Online Undergraduate/Graduate Course. University of Utah. 2010 - 2016
- Human Computer Interaction (EDPS 6440).* Educational Psychology, Graduate Course: Instructional Design & Educational Technology. University of Utah. 2009 - current

CURRICULUM VITAE

<i>Learning Sciences Seminar (EDPS 7440)</i> . Educational Psychology, Graduate Course: Learning Sciences. University of Utah.	2009 - 2014
<i>Using Technology in Diverse Classrooms (EDPS 3140/6141)</i> , Regular & Honors Sections. Educational Psychology, Undergraduate/Graduate Course (Required for Pre-service Teachers in Elementary Education). University of Utah.	2008 - current
<i>Introduction to Web-Based Tools and Applications (EDPS 6447)</i> . Educational Psychology, Graduate Course: Instructional Design & Educational Technology. University of Utah.	2009
<i>Technology & Cognition: Learning with Multimedia</i> . Institute of Cognitive Science, Graduate Seminar, Co-taught with Dr. Tamara Sumner (CU Boulder). University of Colorado at Boulder.	2005
<i>Cognition and Perception Core</i> . Cognitive Psychology, Undergraduate Core Course. University of Colorado at Boulder.	2001
(Teaching Assistant) <i>Psychology of Perception</i> . Cognitive Psychology, Undergraduate Course. University of Colorado at Boulder.	1998
(Teaching Assistant) <i>Introduction to Psychology</i> . Psychology Department, Undergraduate Course: University of Colorado at Boulder.	1997

TEACHING INTERESTS

Comprehension, Learning, and Cognition
Educational Technology, Multimedia, and Instructional Design
Cyberlearning Tools and Services
Technology Integration and Online Instruction for Pre-Service and Practicing Teachers

STUDENT MENTORING

PH.D. STUDENTS

Ph.D. Advisor to Matt Orr, Learning Sciences, University of Utah	2015-
Ph.D. Advisor to Sarah Davies, Learning Sciences, University of Utah	2011-
Ph.D. Advisor to Aaron Dewald, Learning Sciences, University of Utah	2010-
Ph.D. Advisor and Dissertation Committee Chair, Lisa Ferrara, Ph.D. Educational Psychology (Learning and Cognition), University of Utah.	2009-2017
Ph.D. Advisor and Dissertation Committee Chair, Man Hung, Ph.D., Educational Psychology (Learning Sciences), University of Utah. Dissertation title: <i>Achieving science, math, and reading literacy for all: The role of inquiry-based science instruction</i> .	2008-2009
Dissertation Committee Member, Kyle Branch, Ph.D. candidate in the Department of Chemical Engineering (College of Engineering)	2016-
Dissertation Committee Member, Amber Whiteley, Ph.D. candidate in the Department of Educational Psychology (Counseling/Counseling Psychology), University of Utah	2016-
Dissertation Committee Member, Laken Shirley, Ph.D. candidate in the Department of Educational Psychology (Counseling/Counseling Psychology), University of Utah	2015-
Dissertation Committee Member, Melissa Shreve, Ph.D. candidate in the Department of Educational Psychology (Counseling/Counseling Psychology), University of Utah	2014-

CURRICULUM VITAE

Dissertation Committee Member, B. Brian Kuhlman, Ph.D. candidate in the Department of Educational Psychology (Learning Sciences), University of Utah.	2013 - 2014
Dissertation Committee Member, Sara Owen, Ph.D. candidate in the Department of Educational Psychology (Counseling/Counseling Psychology), University of Utah.	2013 - 2015
Dissertation Committee Member, Timothy Indahl, Ph.D. candidate in the Department of Educational Psychology (Learning Sciences), University of Utah.	2012 - 2015
Dissertation Committee Member, Tiffany Jo Merrill, Ph.D. candidate in Educational Psychology (Counseling/Counseling Psychology), University of Utah.	2009-2013
Dissertation Committee Member, Whitney Hagen, Ph.D. candidate in Educational Psychology (Counseling/Counseling Psychology), University of Utah.	2011- 2013
Dissertation Committee Member, Pauline Longberg, Ph.D. candidate in Educational Psychology (Reading and Literacy), University of Utah.	2010-2012
Dissertation Committee Member, William Elder, Ph.D. candidate in Educational Psychology (Counseling/Counseling Psychology), University of Utah.	2011-2012
Dissertation Committee Member, Adam Kuban, Ph.D. candidate in the Department of Communications, University of Utah.	2009 - 2012
Dissertation Committee Member, Matthew Keener, Ph.D., Educational Psychology (Learning Sciences), University of Utah.	2008-2011
Dissertation Committee Member, Adrienne Farley Splinter, Ph.D., Educational Psychology (Learning Sciences), University of Utah.	2008-2010
Dissertation Committee Member, Philipp Wetzler, Ph.D., Computer Science & Cognitive Science, University of Colorado at Boulder.	2008-2010
Dissertation Committee Member, Qianyi Gu, Ph.D., Computer Science & Cognitive Science, University of Colorado at Boulder.	2007-2009
Dissertation Committee Member: Sebastian de la Chica, Ph.D., Computer Science & Cognitive Science, University of Colorado at Boulder.	2005-2008
Dissertation Committee Member, Faisal Ahmad, Ph.D., Computer Science & Cognitive Science, University of Colorado at Boulder.	2005-2008

M.S., M.STAT, & M.ED. STUDENTS

Thesis Committee Chair, Kelly Summers, M.S. Candidate, Instructional Design and Educational Technology, University of Utah.	2013 - 2015
Thesis Committee Chair, Susan Stephenson, M.S., Instructional Design and Educational Technology, University of Utah.	2013 - 2015
Thesis Committee Chair, Corey Stevens, M.S., Instructional Design and Educational Technology, University of Utah.	2012 - 2014
Thesis Committee Chair, Sarah Davies, M.S., Instructional Design and Educational Technology, University of Utah.	2010 - 2012
Thesis Committee Chair, Ashley Crockett, M.S., Instructional Design and Educational Technology, University of Utah.	2010 - 2011

CURRICULUM VITAE

- Thesis Committee Chair, Lisa Ferrara, M.S., Instructional Design and Educational Technology, University of Utah. 2008-2009
- Thesis Committee Member, Michelle Hudson, M.S., Learning Sciences Program, University of Utah 2014-
- Thesis Committee Member, Wei Wei, Learning Sciences Program, University of Utah. 2014-2017
- Thesis Committee Member, Natalie Harris, Learning Sciences, University of Utah. 2012-2013
- Thesis Committee Member, Doug Adams, M.Stat, University of Utah. 2008-2010
- Thesis Committee Member: Sonal Bhushan, M.S., Computer Science, University of Colorado. 2004
- Committee Member, Jeff Vanek, JD, Professional Masters' of Science and Technology program. 2010
- Capstone Project Committee Chair: University of Utah, Instructional Design & Educational Technology, M.Ed. students
- 2016-2017: Marla Beal, Aubrey Hart, Sasha Land, Athena Nadeau, Corban Remund, Patrick Smith
 - 2015-2016: Heather Horseley, Jonathan Lofgren, Teju Shearer-Davis, Andrew Tullis
 - 2014-2015: Chad Crawford, Amanda Higgs, Jeffrey Hodson, McKenna Lane, Kimberley Sorenson
 - 2013-2014: Hiroyuki Takahashi, Ellesse Sorbonne, Robert Mills, Kelly Summers
 - 2012-2013: Adam Schafer, James Fenton, Evan Hanson
 - 2011-2012: Rosemary Defa, Lavar Edwards, Sarah Eyring, Aaron Herd
 - 2010-2011: Kathy Carter, Ran Chen, Catherine Cooper, Ashley Crockett
 - 2009-2010: Aaron Dewald, Richard Finlinson, Brenda Hale
 - 2008-2009: Leilani Funaki, Joanna Gibb
- Capstone Project Committee Member: University of Utah, Instructional Design & Educational Technology, M.Ed. students.
- 2016 – 2017: Brandon Baird, Ashley Bell, Bryce Bird, Pamela Carpenter, Michael Luthy, Marah Metallo, Tristan Olson, Lindsay Snow, Brady Thompson, Terrell Wyche
 - 2015-2016: Erica Ball, Rory Christensen, Jeffrey Honsvick, Cherie Lindhardt, Hailey Richins, Oumar Traore, Chanté Wilson
 - 2014-2015: Robin-Elise Call, Neil Carpenter, Dallin Cowles, Justin Hill, Damon Kenrick, Todd Lagerberg, James Morris, Devaki Murch, Sara Schneider, Kareena Steed
 - 2013-2014: Matthew Anderson, Ray Balhorn III, Tyler Barry, Daniel Berry, Dustin Christensen, Jason Davenport, Rachel Draper, Kerissa Dunn, LaVar Edwards, Allison Hewett, Joshua Knell, Dianna Lee, Ying Ma, Ashton Smith, Benjamin Smith, Jana Tullis

CURRICULUM VITAE

2012-2013: Stefani Anderson, Valerie Boyles, Carol Davis, Alison Gallagher, Maggie Hortin, Janae Hunt, Maku Matsumo, Nicole Herrera, , Kelli Page, Morgan Rindlisbacher, Deanna Weierholt, Jennifer Willie

2011-2012: Laura Adams, Matthew Baumann, David Card, Cynthia Carter, Richard Roper, Don Shirts, Jessie Stewart, Anthony Sudweeks, Ammon Wiemers

2010-2011: Jennifer Fayette, Matthew Greenwood, Denice Lingen, Joshua Miller, Carl Montgomery, Kevin Pompei, Elizabeth Sallay

2009-2010: Justin Brooksby, Dominick Bruso, Christine Ramker, Brianne Swanson, Stephan Taeger, Shawn Atwood, David Butler

2008-2009: Kathryn Blunt, Camille Cole, John Dolan, Richard Hoffman, Jennifer Hogle

OTHER STUDENT ADVISING

University of Utah: College of Education Honors Program. Honors thesis advisor for Parisa Badizadegan	2013-2015
University of Utah: Innovation Scholar Program. Faculty mentor to Madison Gregrich	2013
University of Utah: Innovation Scholar Program. Faculty mentor to Daniel Houston	2013
Research Mentor, Pittsburgh Science of Learning Center Undergraduate Summer Internship Program. Students: Amy Clinch (2006), Alyssa Kaye (2007), Jenna Small (2007)	2006 - 2007
Research Mentor, First Experiences in Research, University of Pittsburgh. Student: Sommer Ebdlahad	2007
Research Supervisor, Undergraduate Research Practicum, University of Pittsburgh. Students: Sommer Lohler (2006), Peter Hung (2007)	2006 - 2007
Scientific writing and communication mentor for SOARS (NCAR's research mentorship program for minority undergraduate/graduate students). Students: Braxton Edwards (2004), Shanna Shaye-Forbes (2005)	2004 - 2005

SERVICE

UNIVERSITY, COLLEGE, & PROGRAM

STANDING COMMITTEES AND GROUPS

University of Utah, Strategic IT Committee (SITC)	2017 -
University of Utah, Biodiversity Faculty Cluster	2015 -
University of Utah, College of Education, RPT Committee	2016 - 2017
University of Utah, College of Education, Undergraduate Degree Committee	2016-
University of Utah, College of Education: Library Representative	2014-
University Information Technology (UIT) Teaching and Learning Portfolio Committee, University of Utah	2013-
College of Education Honors Committee, University of Utah	2012-
Innovation Scholar Program, Steering Committee Member, University of Utah	2011-

CURRICULUM VITAE

Committee for a Technology Enhanced Curriculum, University of Utah	2009 - 2012
Department of Educational Psychology, Learning Sciences Program Committee, University of Utah	2009-
Department of Educational Psychology, Diversity Committee, University of Utah	2009-
<i>TASK FORCES, SEARCH COMMITTEES, AD HOC COMMITTEES</i>	
University of Utah, Department of Educational Psychology, Ad Hoc Art Committee	2016
University of Utah, College of Education: Ad Hoc Committee for Research Excellence	2015
University of Utah, College of Education & Natural History Museum of Utah. Search Committee: Sustaining Biodiversity Cluster (Four interdisciplinary positions)	2015 -
University of Utah, College of Education: Information Technology Manager search committee	2014
University of Utah, College of Education: Mathematics Faculty search committee	2014-2016
University of Utah, Search Committee: Marriott Library Associate Dean for Information Technology services	2014
University of Utah, Student Textbook Savings Committee	2014
University of Utah, Educational Psychology Department, Instructional Design & Educational Technology Program, Search Committee: IDET New Faculty.	2013-2014
University of Utah, Marriott Library Classroom Task Force	2013 - 2014
College of Education, Task Force on Multiple Approaches to Course Instruction, University of Utah	2012 - 2013
Project Administration & Management (PAM) Faculty Advisory Committee, University of Utah	2011
College of Education, Research Action Plan Team, University of Utah	2010 -2011

PROFESSIONAL SERVICE

GRANT REVIEW PANELS

Institute of Education Sciences (IES), Ad Hoc Peer Review Panel	2015, 2016
National Science Foundation, Cyberlearning: Transforming Education	2011, 2013, 2014
National Science Foundation, Ad Hoc Grant Proposal Reviewing	2012
National Science Foundation, National Science Digital Library (NSDL)	2007
National Science Foundation, Advanced Learning Technologies (ALT)	2006

JOURNAL SERVICE

EDITORIAL BOARD, ADVISORY EDITOR

Journal of Educational Psychology	2012 - present
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EDITORIAL BOARD, ASSOCIATE EDITOR

International Journal of Research on Cyber Behavior, Psychology, and Learning	2008- present
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AD HOC REVIEWER

Applied Cognitive Psychology	2009, 2013 - present
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CURRICULUM VITAE

Behavior Research Methods	2011, 2014
Computers and Education	2014 - present
Cognition and Instruction	2011 - present
Computers in Human Behavior	2017 - present
Discourse Processes	2014 - present
Education Research and Reviews	2008
Human Computer Interaction (HCI)	2009
IEEE Transactions on Learning Technologies	2016
International Journal on Digital Libraries	2006
Interactive Learning Environments	2016
Journal of Computer Assisted Learning	2013
Journal of Educational Psychology	2005, 2008 - 2012
Journal of Educational Data Mining	2010
Journal of Learning Analytics	2015
Learning and Instruction	2010 - present
Transactions on Computer-Human Interactions (TOCHI)	2005
Asia Pacific Education Review	2011 - present

PEER-REVIEWED ACADEMIC CONFERENCES

American Educational Research Association, 2016 Annual Meeting.	2016
<ul style="list-style-type: none"> • Session Discussant. Paper session: <i>Examining flipped classroom learning environments. (Division C: Learning and Instruction)</i> • Session Discussant. Paper session: <i>Technology for improving robotics and mathematics learning in early educational settings. (SIG: Technology, Instruction, Cognition, & Learning)</i> 	
American Educational Research Association, 2014 Annual Meeting.	2014
<ul style="list-style-type: none"> • Session Discussant: Paper session: <i>Presence, Interaction, and Engagement in Learning (Instructional Technology SIG)</i> • Session Chair: <i>Learning on the Go: Mobile Devices in Education (Division C Learning and Instruction)</i> 	
American Educational Research Association, 2013 Annual Meeting. Session Discussant:	2013
Paper session: <i>Technology-Mediated Collaborative Inquiry (Division C Learning and Instruction)</i>	
American Educational Research Association, 2012 Annual Meeting. Session Chair:	2012
<ul style="list-style-type: none"> • <i>Visual Displays Paper Session (Division C)</i> • <i>Issues in Technology, Instruction, Cognition and Learning Roundtable Session (SIG: Technology, Instruction, Cognition and Learning).</i> 	
American Educational Research Association (AERA): Proposal Reviewer	2011 - present
Cognitive Science Conference (CogSci): Proposal Reviewer	2006 - present
Computer Human Interaction (CHI) Conference: Proposal Reviewer	2006, 2007

CURRICULUM VITAE

PUBLIC SERVICE / COMMUNITY ENGAGEMENT

Project Judge: 2016-2017 High School Utah Entrepreneurship Challenge (HS UEC)	2017
Volunteer Expert Session for Brownie Troop #326. Developed and guided 20 girls through a cohesive set of skill-based digital activities to earn their "Computer Expert" badges at the University of Utah.	2017
Participant and Session Leader: Utah Ed Camp. Annual professional development event to facilitate collaboration and knowledge exchange amount Utah teachers and educators. (Sponsored by UCET.)	2014 -
State Judge Advisor (all areas), Utah FIRST LEGO League Robotics State Championship, Salt Lake City, UT	2013-2016
Qualifying Tournament Judge Advisor, Utah FIRST LEGO League (a robotics & science innovation program for 9-14 year olds). Salt Lake Community College qualifying tournament.	2015-2017
Head Judge (Core Values) and Organizing Committee Member, Utah FIRST LEGO League (a robotics & science innovation program for 9-14 year olds)	2011-2012
Utah FIRST LEGO League Robotics State Championship, Project Judge, Salt Lake City, UT	2011

PREVIOUS ACADEMIC INSTITUTIONS

Co-Coordinator, Pittsburgh Science of Learning Center Postdoctoral SWOT Analysis, University of Pittsburgh	2007
Thompson Guest Lecturer Planning Committee: National Center for Atmospheric Research Advanced Studies Program	2005
Review Committee Member, Scientific Computing Division Strategic Plan, National Center for Atmospheric Research; Boulder, CO	2004
Institute of Cognitive Science, Academic Programs Committee, University of Colorado, Boulder	2001 - 2003
Coordinator, Prospective Graduate Student Weekend, University of Colorado, Boulder	1999
Accreditation Review Committee, Whitman College	1997
College Policy Committee, Whitman College	1996 - 1997