

Laura K. Allen

Assistant Professor
 Department of Psychology
 Mississippi State University
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EDUCATION

- 2017 **Doctor of Philosophy, Psychology (Cognitive Science)**
 Arizona State University
- 2014 **Master of Arts, Psychology**
 Arizona State University, *summa cum laude*
- 2010 **Bachelor of Arts, English**
 Mississippi State University, *summa cum laude*
- 2010 **Bachelor of Arts, Foreign Languages (French)**
 Mississippi State University, *summa cum laude*
- 2010 **TESOL Certificate**
 Mississippi State University

GRANTS AND FELLOWSHIPS

Current and Previous Support

- 2016-2019 **Improving Adults' Source-Based Writing Using Adaptive Reading and Writing Instruction**
Agency: Office of Naval Research
Role: Co-PI
Amount: \$886,170
- 2016-2017 **Data Consortium Fellowship**
Agency: National Science Foundation
Sub-Award Amount: \$2,000
- 2016 **Graduate Excellence Fellowship for First Generation College Students**
Agency: Arizona State University
Amount: \$5,000

Pending Support (under review)

- 2018-2022 **Developing a Deeper Understanding of the Cognitive Processes that Drive Multiple Text Comprehension**
Agency: Institute for Education Sciences (IES)
Role: Co-PI

- 2018-2022 **The Development of the Writing Assessment Tool (WAT): An On-Line Platform for the Automated Assessment of Writing Educational Technology**
Agency: Institute for Education Sciences (IES)
Role: Co-PI
- 2018-2022 **Using Computational Linguistics to Detect Comprehension Processes in Constructed Responses across Multiple Large Data Sets**
Agency: Institute for Education Sciences (IES)
Role: Co-PI
- 2018-2020 **Comprehending and Learning Science: Advancing Understanding through Computational Linguistic Analyses of Constructed Responses**
Agency: National Science Foundation (NSF)
Role: Co-PI
- 2018-2021 **Learning Science across Multiple Documents: Uncovering Dynamic Cognitive Processes using Multiple Data Streams**
Agency: National Science Foundation (NSF)
Role: Co-PI
- 2018-2021 **Understanding Temporal Interactions among the Learner, the Text, and the Task**
Agency: National Science Foundation (NSF)
Role: Co-PI
- 2018-2021 **The Development of an Online Platform for the Automated Assessment of Science Writing**
Agency: National Science Foundation (NSF)
Role: Co-PI

Grant Research Experience

- 2012-2016 **Exploration of Automated Writing Strategy Instruction for Adolescent Writers using the Writing Pal**
Agency: Institute for Education Sciences (IES)
Role: Graduate Research Assistant
- 2013-2017 **Exploring the Educational Game Landscape through Focused Studies and Ecological Interventions**
Agency: Institute for Education Sciences (IES)
Role: Graduate Research Assistant
- 2014-2017 **Improving Adult Literacy through Intelligent Tutoring and Games**
Agency: Office of Naval Research (ONR)
Role: Graduate Research Assistant

AWARDS AND HONORS

- 2017 ASU Doctoral Scholar Award
- 2017 Finalist for Best Paper Award at the 2017 LAK Conference
- 2015 Society for Text and Discourse Outstanding Student Paper Award
- 2015 Psychology Graduate Scholar Award, \$1500
- 2014 John Castellan Award for Best Student Paper at the 2014 Society for Computers in Psychology (SCIP) Conference
- 2013 Honorable Mention – Finalist for Best Paper Award at the 26th Annual FLAIRS Conference
- 2013 Honorable Mention – Finalist for Best Paper Award at the 26th Annual FLAIRS Conference
- 2013 Latin American (LA) School for Education, Cognitive and Neural Sciences
(Full scholarship and acceptance to a two-week school)

PUBLICATIONS

Refereed Journal Articles

- Varner (Allen)**, L. K., Roscoe, R. D., & McNamara, D. S. (2013). Evaluative misalignment of 10th-grade student and teacher criteria for essay quality: An automated textual analysis. *Journal of Writing Research*, 5, 35-59.
- Jackson, G. T., **Varner (Allen)**, L. K., Boonthum-Denecke, C., & McNamara, D. S. (2013). The impact of individual differences on learning with an educational game and a traditional ITS. *International Journal of Learning Technology*, 8, 315-336.
- Roscoe, R. D., **Varner (Allen)**, L. K., Crossley, S. A., & McNamara, D. S. (2013). Developing pedagogically-guided threshold algorithms for intelligent automated essay feedback. *International Journal of Learning Technology*, 8, 362-381.
- Allen**, L. K., Crossley, S. A., Snow, E. L., & McNamara, D. S. (2014). Game-based writing strategy tutoring for second language learners: Game enjoyment as a key to engagement. *Language Learning and Technology*, 18, 124-150.
- Allen**, L. K., Snow, E. L., & Crossley, S. A., Jackson, G. T., & McNamara, D. S. (2014). Reading comprehension components and their relation to the writing process. *L'année psychologique/Topics in Cognitive Psychology*, 114, 663-391.
- Crossley, S. A., **Allen**, L. K., Kyle, K., & McNamara, D. S. (2014). Analyzing discourse processing using a simple natural language processing tool (SiNLP). *Discourse*

Processes, 51, 511-534.

- Crossley, S. A., Kyle, K., **Allen**, L. K., Guo, L., & McNamara, D. S. (2014). Linguistic microfeatures to predict L2 writing proficiency: A case study in automated writing evaluation. *Journal of Writing Assessment*, 7. Retrieved from <http://www.journalofwritingassessment.org/article.php?article=74>
- Roscoe, R. D., **Allen**, L. K., Weston, J. L., Crossley, S. A., & McNamara, D. S. (2014). The Writing Pal intelligent tutoring system: Usability testing and development. *Computers and Composition*, 34, 39-59.
- McNamara, D. S., Crossley, S. A., Roscoe, R. D., **Allen**, L. K., & Dai, J. (2015). A hierarchical classification approach to automated essay scoring. *Assessing Writing*, 23, 35-59.
- McNamara, D. S., Jacovina, M. E., Snow, E. L., & **Allen**, L. K., (2015). From generating in the lab to tutoring systems in the classroom. *Journal of American Psychology*, 128, 159-172.
- Roscoe, R. D., Snow, E. L., **Allen**, L. K., & McNamara, D. S. (2015). Automated detection of essay revising patterns: Application for intelligent feedback in a writing tutor. *Technology, Instruction, Cognition, and Learning*, 10, 59-79.
- Snow, E. L., **Allen**, L. K., Jacovina, M. E., & McNamara, D. S. (2015). Does agency matter?: Exploring the impact of controlled behaviors within a game-based environment. *Computers in Education*, 26, 378-392.
- Snow, E. L., **Allen**, L. K., Jacovina, M. E., Crossley, S. D., Perret, C. A., & McNamara, D. S. (2015). Keys to detecting writing flexibility over time: Entropy and natural language processing. *International Journal of Learning Analytics*, 2, 40-54.
- Snow, E. L., Jackson, G. T., **Allen**, L. K., & McNamara, D. S. (2015). Spendency: A students' propensity to interact with game-based features. *International Journal of Artificial Intelligence in Education*, 25, 407-427.
- Snow, E. L., Likens, A. D., **Allen**, L. K., & McNamara, D. S. (2015). Taking control: Stealth assessment of deterministic behaviors within a game-based system. *International Journal of Artificial Intelligence in Education*, 26, 1011-1032.
- Allen**, L. K., Snow, E. L., & McNamara, D. S. (2016). The narrative waltz: The role of flexibility on writing performance. *Journal of Educational Psychology*, 108, 911-924.
- Crossley, S. A., **Allen**, L. K., Snow, E. L., & McNamara, D. S. (2016). Incorporating learning characteristics into automatic essay scoring models: What individual differences and linguistic features tell us about writing quality. *Journal of Educational Data Mining*, 8, 1-19.

- Weston-Sementelli, J. L., **Allen**, L. K., & McNamara, D. S. (2016). Comprehension and writing strategy training improves performance on source-based writing in science. *International Journal of Artificial Intelligence in Education*, 18, 1-32.
- Dascalu, M., McNamara, D. S., Trausan-Matu, S., & **Allen**, L. K. (2017). Cohesion network analysis of CSCL participation. *Behavioral Research Methods*, 1-16.
- Crossley, S. A., **Allen**, L. K., & McNamara, D. S. (in press). What's prompt got to do with it? The relationships between writing prompts, language production, and essay quality. *Assessing Writing*.
- Roscoe, R. D., **Allen**, L. K., & McNamara, D. S. (revisions in progress). Contrasting writing practice formats in a writing strategy tutoring system. *Journal of Educational Computing Research*.
- Allen**, L. K., Likens, A. D., & McNamara, D. S. (revisions in progress). Writing flexibility in argumentative essays: A multidimensional analysis. *Reading and Writing*.
- Allen**, L. K., & McNamara, D. S. (revisions in progress). In other words: Lower- and higher-level cognitive skills mirrored in the properties of written essays. Submitted to *Discourse Processes*.
- McCarthy, K., Guerrero, T. A., Kent, K. M., **Allen**, L. K., McNamara, D. S., Chao, S., Steinberg, J., O'Reilly, T., & Sabatini, J. (revisions in progress). Comprehension in a scenario-based assessment: General and topic-specific background knowledge. *Discourse Processes*.

Journal Articles Under Review

- Allen**, L. K., Likens, A. D., & McNamara, D. S. (under review). An examination of the online behaviors underlying writing flexibility. *Behavior Research Methods*.
- Allen**, L. K., McNamara, D. S., & McCrudden, M. T. (under review). Examining the effect of self-explanation in the resolution of misconceptions. *Journal of Educational Psychology*.
- Berger, C., Crossley, S. A., **Allen**, L. K., & Verspoor, M. (under review). The development of lexical and syntactic complexity in L2 learning writing. Submitted to *Studies in Second Language Acquisition*.
- Roscoe, R. D., **Allen**, L. K., Mayra, C. R., Johnson, A. C., Snow, E. L., & McNamara, D. S. (under review). High school student perceptions of automated writing evaluation. Submitted to *Educational Technology Research and Development*.

Book Chapters

- Crossley, S. A., **Allen**, L. K., & McNamara, D. S. (2014). A multi-dimensional analysis of essay writing: What linguistic features tell us about situational parameters and the effects of language functions on judgments of quality. In T. B. Sardinha and M. V. Pinto (Eds.), *Multi-dimensional analysis, 25 years on: A tribute to Douglas Biber* (pp. 197-237). Philadelphia, PA: John Benjamins.
- McNamara, D. S., Jacovina, M. E., & **Allen**, L. K. (2015). Higher order thinking in comprehension. In P. Afflerbach (Ed.), *Handbook of individual differences in reading: Text and context* (pp. 164-176). Taylor & Francis, Routledge: NY.
- Snow, E. L., **Allen**, L. K., & McNamara, D. S. (2015). The dynamical analysis of log-data within educational games. In Loh and Sheng (Eds.). *Serious games analytics: Methodologies for performance measurement, assessment, and improvement* (pp. 81-100). Springer International Publishing.
- Allen**, L. K., Jacovina, M. E., & McNamara, D. S. (2016). Computer-based writing instruction. In C. A. MacArthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of writing research (2nd ed.)* (pp. 316-329). New York, NY: The Guilford Press.
- Allen**, L. K., & McNamara, D. S. (2016). The role of language development in the successful comprehension of texts. In C. Connor (Ed.), *The cognitive development of reading* (pp. 87-98). Taylor & Francis, Routledge: NY.
- Allen**, L. K., & Perret, C. (2016). Commercialized writing systems. In D. S. McNamara & S. A. Crossley (Eds.), *Handbook on educational technologies for literacy* (pp. 145-162). Taylor & Francis, Routledge: NY.
- Crossley, S. A., **Allen**, L. K., & McNamara, D. S. (2016). The Writing Pal: A writing strategy tutor. In D. S. McNamara & S. A. Crossley (Eds.), *Handbook on educational technologies for literacy* (pp. 204-224). Taylor & Francis, Routledge: NY.
- Jackson, G. T., **Allen**, L. K., & McNamara, D. S. (2016). Common Core TERA: Text Ease and Readability Assessor. In D. S. McNamara & S. A. Crossley (Eds.), *Handbook on educational technologies for literacy* (pp. 49-68). Taylor & Francis, Routledge: NY.
- Allen**, L. K., & McNamara, D. S. (2017). Five building blocks for comprehension strategy instruction. In José A. León & Inmaculada Escudero (Eds.), *Reading comprehension in educational settings* (pp. 125-144). John Benjamins Publishing Company.
- McNamara, D. S., **Allen**, L. K., Crossley, S. A., Dascalu, M., & Perret, C. (2017). Natural language processing and learning analytics. In G. Siemens & C. Lang (Eds.),

Handbook of learning analytics and educational data mining (pp. 93-104).
Society for Learning Analytics Research.

Stone, M., Kent, K. M., Roscoe, R. D., Corley, K. M., **Allen**, L. K., & McNamara, D. S. (2017). The Design Implementation Framework: Iterative design from the lab to the classroom. In R. Roscoe, S. D. Craig, & I. Douglas (Eds.), *End-user considerations in educational technology design* (pp.76-98). Hershey, PA: IGI Global.

McCarthy, K. S., Kopp, K. J., **Allen**, L. K., & McNamara, D. S. (in press). Methods of studying text: Memory, comprehension, and learning. To appear in *Handbook of Research Methods in Human Memory*.

McNamara, D. S., & **Allen**, L. K. (in press). Toward an integrated perspective of writing as a discourse process. To appear in *Handbook of discourse processes (2nd ed.)*.

McNamara, D. S., & **Allen**, L. K. (under review). Defining deep reading comprehension for diverse readers. To appear in *Handbook of reading research (Vol. V)*.

McNamara, D. S., **Allen**, L. K., McCarthy, K. S., & Balyan, R. (under review). NLP: Getting computers to understand discourse. To appear in *Deep learning: Multi-disciplinary approaches*.

Allen, L. K., Likens, A. D., & McNamara, D. S. (in preparation). Modeling the dissemination of misinformation through discourse dynamics. To appear in *Misinformation, 'quackery', and 'fake news' in education*.

Published Conference Proceedings (Peer Reviewed)

Roscoe, R. D., **Varner (Allen)**, L. K., Cai, Z., Weston, J. L., Crossley, S. A., & McNamara, D. S. (2011). Internal usability testing of automated essay feedback in an intelligent writing tutor. In R. C. Murray & P. M. McCarthy (Eds.), *Proceedings of the 24th International Florida Artificial Intelligence Research Society (FLAIRS) Conference* (pp. 543-548). Menlo Park, CA: AAAI Press.

Crossley, S. A., **Varner (Allen)**, L. K., & McNamara, D. S. (2013). Cohesion-based prompt effects in argumentative writing. In C. Boonthum-Denecke & G. M. Youngblood (Eds.), *Proceedings of the 26th International Florida Artificial Intelligence Research Society (FLAIRS) Conference* (pp. 202-207). Menlo Park, CA: The AAAI Press. [Runner-up for Best Paper Award]

Crossley, S. A., **Varner (Allen)**, L. K., Roscoe, R. D., & McNamara, D. S. (2013). Using automated cohesion indices as a measure of writing growth in intelligent tutoring systems and automated essay writing systems. In K. Yacef et al. (Eds.), *Proceedings of the 16th International Conference on Artificial Intelligence in Education (AIED)* (pp. 269-278). Heidelberg, Berlin: Springer.

- Jackson, G. T., Snow, E. L., **Varner (Allen)**, L. K., & McNamara, D. S. (2013). Game performance as a measure of comprehension and skill transfer. In C. Boonthum-Denecke & G. M. Youngblood (Eds.), *Proceedings of the 26th International Florida Artificial Intelligence Research Society (FLAIRS) Conference* (pp. 497-502). Menlo Park, CA: The AAI Press.
- Snow, E. L., Jackson, G. T., **Varner (Allen)**, L. K., & McNamara, D. S. (2013). Expectations of technology: A factor to consider in game-based learning environments. In K. Yacef et al. (Eds.), *Proceedings of the 16th International Conference on Artificial Intelligence in Education (AIED)* (pp. 359-368). Heidelberg, Berlin: Springer.
- Snow, E. L., Jackson, G. T., **Varner (Allen)**, L. K., & McNamara, D. S. (2013). Investigating the effects of off-task personalization on system performance and attitudes within a game-based environment. In S. K. D'Mello, R. A., Calvo, & A. Olney (Eds.), *Proceedings of the 6th International Conference on Educational Data Mining* (pp. 272-275). Heidelberg, Berlin, Germany: Springer.
- Snow, E. L., Jackson, G. T., **Varner (Allen)**, L. K., & McNamara, D. S. (2013). The impact of performance orientation on students' interactions and achievements in an ITS. In C. Boonthum-Denecke & G. M. Youngblood (Eds.), *Proceedings of the 26th International Florida Artificial Intelligence Research Society (FLAIRS) Conference* (pp. 521-526). Menlo Park, CA: AAI Press.
- Snow, E. L., Jackson, G. T., **Varner (Allen)**, L. K., & McNamara, D. S. (2013). The impact of system interactions on motivation and performance. In *Proceedings of the 15th International Conference on Human-Computer Interaction (HCII)* (pp. 103-107). Heidelberg, Berlin, Germany: Springer.
- Varner (Allen)**, L. K., Jackson, G. T., Snow, E. L., & McNamara, D. S. (2013). Are you committed? Investigating interactions among reading commitment, natural language input, and students' learning outcomes. In S. K. D'Mello, R. A., Calvo, & A. Olney (Eds.), *Proceedings of the 6th International Conference on Educational Data Mining* (pp. 368-369). Heidelberg, Berlin, Germany: Springer.
- Varner (Allen)**, L. K., Jackson, G. T., Snow, E. L., & McNamara, D. S. (2013). Does size matter? Investigating user input at a larger bandwidth. In C. Boonthum-Denecke & G. M. Youngblood (Eds.), *Proceedings of the 26th International Florida Artificial Intelligence Research Society (FLAIRS) Conference* (pp. 546-549). Menlo Park, CA: AAI Press. [Runner-up for Best Poster Award]
- Varner (Allen)**, L. K., Jackson, G. T., Snow, E. L., & McNamara, D. S. (2013). Linguistic content analysis as a tool for improving adaptive instruction. In K. Yacef et al. (Eds.), *Proceedings of the 16th International Conference on Artificial Intelligence in Education (AIED)* (pp. 692-695). Heidelberg, Berlin: Springer.

- Allen**, L. K., Snow, E. L., & McNamara, D. S. (2014). The long and winding road: Investigating the differential writing patterns of high and low skilled writers. In J. Stamper, Z. Pardos, M. Mavrikis, & B. M. McLaren (Eds.), *Proceedings of the 7th International Conference on Educational Data Mining* (pp. 304-307). London, UK
- Allen**, L. K., Snow, E. L., & McNamara, D. S. (2014). Now we're talking: Leveraging the power of natural language processing to inform ITS development. In J. Stamper, Z. Pardos, M. Mavrikis, & B. M. McLaren (Eds.), *Proceedings of the 7th International Conference on Educational Data Mining* (pp. 401-402). London, UK.
- Crossley S. A., Kyle, K., **Allen**, L. K., & McNamara, D. S. (2014). The importance of grammar and mechanics in writing assessment and instruction: Evidence from data mining. In J. Stamper, Z. Pardos, M. Mavrikis, & B. M. McLaren (Eds.), *Proceedings of the 7th International Conference on Educational Data Mining* (pp. 300-303). London, UK.
- Roscoe, R. D., Crossley, S. A., Snow, E. L., **Varner (Allen)**, L. K., & McNamara, D. S. (2014). Writing quality, knowledge, and comprehension correlates of human and automated essay scoring. In W. Eberle & C. Boonthum-Denecke (Eds.), *Proceedings of the 27th International Florida Artificial Intelligence Research Society (FLAIRS) Conference* (pp. 393-398). Palo Alto, CA: AAAI Press.
- Roscoe, R. D., **Varner (Allen)**, L. K., Snow, E. L., & McNamara, D. S. (2014). Designing usable automated formative feedback for intelligent tutoring of writing. In J. L. Polman, E. A. Kyza, D. K. O'Neill, I. Tabak, W. R. Penuel, A. S. Jurow, K. O'Connor, T. Lee, & L. D'Amico (Eds.), *Proceedings of the 11th International Conference of the Learning Sciences (ICLS), Volume 3* (pp. 1423-1425). Boulder, CO.
- Snow, E. L., Jacovina, M. E., **Allen**, L. K., Dai, J., & McNamara, D. S. (2014). Entropy: A stealth assessment of agency in learning environments. In J. Stamper, Z. Pardos, M. Mavrikis, & B. M. McLaren (Eds.), *Proceedings of the 7th International Conference on Educational Data Mining* (pp. 241-244). London, UK.
- Snow, E. L., **Allen**, L. K., & McNamara, D. S. (2014). Tracking choices: Computational analysis of learning trajectories. In J. Stamper, Z. Pardos, M. Mavrikis, & B. M. McLaren (Eds.), *Proceedings of the 7th International Conference on Educational Data Mining* (pp. 316-319). London, UK.
- Snow, E. L., **Allen**, L. K., Russell, D. G., & McNamara, D. S. (2014). Who's in control?: Categorizing nuanced patterns of behaviors within a game-based intelligent tutoring system. In J. Stamper, Z. Pardos, M. Mavrikis, & B. M. McLaren (Eds.), *Proceedings of the 7th International Conference on Educational Data Mining* (pp. 185-192). London, UK.

- Allen**, L. K., Crossley, S. A., & McNamara, D. S. (2015). Predicting misalignment between teachers' and students' essay scores using natural language processing tools. In A. Mitrovic, F. Verdejo, C. Conati, & N. Heffernan (Eds.), *Proceedings of the 17th International Conference on Artificial Intelligence in Education (AIED 2015)*. Madrid, Spain.
- Allen**, L. K., Crossley, S. A., Snow, E. L., Jacovina, M. E., Perret, C., & McNamara, D. S. (2015). Am I wrong or am I right? Gains in monitoring accuracy in an intelligent tutoring system for writing. In A. Mitrovic, F. Verdejo, C. Conati, & N. Heffernan (Eds.), *Proceedings of the 17th International Conference on Artificial Intelligence in Education (AIED 2015)*. Madrid, Spain.
- Allen**, L. K., & McNamara, D. S. (2015). Promoting self-regulated learning in an intelligent tutoring system for writing. In A. Mitrovic, F. Verdejo, C. Conati, & N. Heffernan (Eds.), *Doctoral Consortium within the Proceedings of the 17th International Conference on Artificial Intelligence in Education (AIED 2015)*. Madrid, Spain.
- Allen**, L. K., & McNamara, D. S. (2015). Who do you think I am? Modeling individual differences for more adaptive and effective instruction. In O. C. Santos, J. G. Boticario, C. Romero, M. Pechenizkiy, A. Merceron, P. Mitros, J. M. Luna, C. Mihaescu, P. Moreno, A. Hershkovitz, S. Ventura, & M. Desmarais (Eds.), *Doctoral Consortium within the Proceedings of the 8th International Conference on Educational Data Mining (EDM 2015)*. Madrid, Spain.
- Allen**, L. K., & McNamara, D. S. (2015). You are your words: Modeling students' vocabulary knowledge with natural language processing. In O. C. Santos, J. G. Boticario, C. Romero, M. Pechenizkiy, A. Merceron, P. Mitros, J. M. Luna, C. Mihaescu, P. Moreno, A. Hershkovitz, S. Ventura, & M. Desmarais (Eds.), *Proceedings of the 8th International Conference on Educational Data Mining (EDM 2015)*. Madrid, Spain.
- Allen**, L. K., McNamara, D. S., & McCrudden, M. T. (2015). Change your mind: Investigating the effects of self-explanation in the resolution of misconceptions. In D. C. Noelle, R. Dale, A. S. Warlaumont, J. Yoshimi, T. Matlock, C. D. Jennings, & P. Maglio (Eds.), *Proceedings of the 37th Annual Meeting of the Cognitive Science Society (Cog Sci 2015)*. Pasadena, CA.
- Allen**, L. K., Snow, E. L., & McNamara, D. S. (2015). Are you reading my mind? Modeling students' reading comprehension skills with Natural Language Processing techniques. In P. Blikstein, A. Merceron, & G. Siemens (Eds.), *Proceedings of the 5th International Learning Analytics & Knowledge Conference* (pp. 246-254). Poughkeepsie, NY.
- Crossley, S. A., **Allen**, L. K., Snow, E. L., & McNamara, D. S. (2015). Pssst...Textual features...There is more to automatic essay scoring than just you! In P. Blikstein,

- A. Merceron, & G. Siemens (Eds.), *Proceedings of the 5th International Learning Analytics & Knowledge Conference* (pp. 203-207). Poughkeepsie, NY.
- Jacovina, M.E., Snow, E. L., **Allen**, L. K., Roscoe, R. D., Weston, J. L., Dai, J., & McNamara, D. S. (2015). How to visualize success: Presenting complex data in a writing strategy tutor. In O. C. Santos, J. G. Boticario, C. Romero, M. Pechenizkiy, A. Merceron, P. Mitros, J. M. Luna, C. Mihaescu, P. Moreno, A. Hershkovitz, S. Ventura, & M. Desmarais (Eds.), *Proceedings of the 8th International Conference on Educational Data Mining (EDM 2015)*. Madrid, Spain.
- Snow, E. L., **Allen**, L. K., Jacovina, M. E., Perret, C. A., & McNamara, D.S. (2015). You've got style! Detecting writing flexibility across time. In P. Blikstein, A. Merceron, & G. Siemens (Eds.), *Proceedings of the 5th International Learning Analytics & Knowledge Conference* (pp. 194-202). Poughkeepsie, NY.
- Snow, E. L., McNamara, D. S., Jacovina, M. E., **Allen**, L. K., Johnson, A. M., Perret, C. A., Dai, J., Jackson, G. T., Likens, A. D., Russell, D. G., & Weston, J. L. (2015). Promoting metacognitive awareness within a game-based intelligent tutoring system. In A. Mitrovic, F. Verdejo, C. Conati, & N. Heffernan (Eds.), *Proceedings of the 17th International Conference on Artificial Intelligence in Education (AIED 2015)*. Madrid, Spain.
- Soto, C. M., McNamara, D. S., Jacovina, M. E., Snow, E. L., Dai, J., **Allen**, L. K., Perret, C. A., Johnson, A. M., & Russell, D. G. (2015). iSTART-E: Desarrollando un tutor inteligente para la comprensión lectora de estudiantes de habla hispana. In M. Garcia (Ed.), *Proceedings of the 15th annual colloquium on peninsular and Spanish American literature, linguistics and culture*. Orlando, FL.
- Allen**, L. K., Dascalu, M., McNamara, D. S., Crossley, S. A., & Trausan-Matu, S. (2016). Modeling individual differences among writers using ReaderBench. *EduLearn*.
- Allen**, L. K., Jacovina, M. E., Dascalu, M., Roscoe, R. D., Kent, K., Likens, A. D., & McNamara, D. S. (2016). {ENTER}ing the time series {SPACE}: Uncovering the writing process through keystroke analyses. In T. Barnes, M. Chi, & M. Feng (Eds.), *Proceedings of the 9th International Conference on Educational Data Mining, Raleigh, NC (EDM 2016)* (pp.22-29).
- Allen**, L. K., Jacovina, M. E., & McNamara, D. S. (2016). Cohesive features of deep text comprehension processes. In J. Trueswell, A. Papafragou, D. Grodner, & D. Mirman (Eds.), *Proceedings of the 38th Annual Meeting of the Cognitive Science Society* (pp. 2681-2686). Philadelphia, PA: Cognitive Science Society.
- Allen, L. K., Mills, C., Jacovina, M. E., Crossley, S. A., D'Mello, S. K., & McNamara, D. S. (2016). Investigating boredom and engagement during writing using multiple sources of information: The essay, the writer, and keystrokes. In D. Gašević, G.

- Lynch, S. Dawson, H. Drachsler, & C. P. Rosé (Eds.), *Proceedings of the 6th International Learning Analytics & Knowledge Conference*, Edinburgh, United Kingdom (LAK'16), (pp. 114-123). New York, NY: ACM.
- Allen**, L. K., Perret, C., & McNamara, D. S. (2016). Linguistic signatures of cognitive processes during writing. In J. Trueswell, A. Papafragou, D. Grodner, & D. Mirman (Eds.), *Proceedings of the 38th Annual Meeting of the Cognitive Science Society* (pp. 2483-2488). Philadelphia, PA: Cognitive Science Society.
- Buckingham Shum, S., Knight, S., McNamara, D. S., **Allen**, L. K., Bektik, D., & Crossley, S. A. (2016). Critical perspectives on writing analytics. In D. Gašević, G. Lynch, S. Dawson, H. Drachsler, & C. P. Rosé (Eds.), *Proceedings of the 6th International Learning Analytics & Knowledge Conference*, Edinburgh, United Kingdom (LAK'16), (pp. 481-483). New York, NY: ACM.
- Crossley, S. A., Dascalu, M., Trausan-Matu, S., **Allen**, L. K., & McNamara, D. S. (2016). Document cohesion flow: Striving towards coherence. In J. Trueswell, A. Papafragou, D. Grodner, & D. Mirman (Eds.), *Proceedings of the 38th Annual Meeting of the Cognitive Science Society* (pp. 764-769). Philadelphia, PA: Cognitive Science Society.
- Gifu, D., Dascalu, M., Trausan-Matu, S., & **Allen**, L. K. (2016). Time evolution of writing styles in Romanian language. In *Proceedings of the 28th International Conference on Tools with Artificial Intelligence (ICTAI)* (pp. 1048-1054).
- Knight, S. **Allen**, L. K., Littleton, K., Rienties, B., & Tempelaar, D. (2016). Writing analytics for epistemic features of student writing. Looi, C. K., Polman, J. L., Cress, U., and Reimann, P. (Eds.). (2016). *Transforming Learning, Empowering Learners: The International Conference of the Learning Sciences (ICLS) 2016*, (pp. 194-200). Singapore: International Society of the Learning Sciences.
- Roscoe, R. D., Jacovina, M. E., **Allen**, L. K., Johnson, A. C., & McNamara, D. S. (2016). Toward revision-sensitive feedback in automated writing evaluation. *T. Barnes, M. Chi, & M. Feng (Eds.), Proceedings of the 9th International Conference on Educational Data Mining, Raleigh, NC (EDM 2016)* (pp.628-629).
- Allen**, L. K., Likens, A., & McNamara, D. S. (2017). Recurrence Quantification Analysis: A technique for the dynamical analysis of student writing. In Z. Markov & V. Rus (Eds.), *Proceedings of the 30th Annual Florida Artificial Intelligence Research Society International Conference (FLAIRS)*. Marco Island, FL: AAAI Press.
- Allen**, L. K., Perret, C., Likens, A., & McNamara, D. S. (2017). What'd you say again? Recurrence quantification analysis as a method for analyzing the dynamics of discourse in a reading strategy tutor. In *Proceedings of the Seventh International Learning Analytics and Knowledge Conference* (pp. 373-382). Vancouver, BC: ACM. [Best Paper Nominee]

- Dascalu, M., **Allen**, L. K., McNamara, D. S., Trausan-Matu, S., & Crossley, S. A. (2017). Modeling comprehension processes via automated analyses of dialogism. In G. Gunzelmann, A. Howes, T. Tenbrink, & E. Davelaar (Eds.), *Proceedings of the 39th Annual Meeting of the Cognitive Science Society (CogSci 2017)*. London, UK: Cognitive Science Society.
- Dascalu, M., Jacovina, M. E., Soto, C., **Allen**, L. K., Guerrero, T. & McNamara, D. S. (2017). Teaching iSTART to understand Spanish. In R. Baker & E. Andre (Eds.), *Proceedings of the 18th International Conference on Artificial Intelligence in Education (AIED)*, Wuhan, China: Springer.
- Likens, A. D., **Allen**, L. K., & McNamara, D. S. (2017). Keystroke dynamics predict essay quality. In G. Gunzelmann, A. Howes, T. Tenbrink, & E. Davelaar (Eds.), *Proceedings of the 39th Annual Meeting of the Cognitive Science Society (CogSci 2017)* (pp. 2573 - 2578). London, UK: Cognitive Science Society.
- Allen**, L. K., Likens, A. D., & McNamara, D. S. (in press). A multi-dimensional analysis of writing flexibility in an automated writing evaluation system. To appear in *Proceedings of the Eighth International Learning Analytics and Knowledge Conference*. Sydney, Australia.
- Likens, A. D., McCarthy, K. M., **Allen**, L. K., & McNamara, D. S. (in press). Recurrence Quantification Analysis as a method for studying text comprehension dynamics. To appear in *Proceedings of the Eighth International Learning Analytics and Knowledge Conference*. Sydney, Australia.

Non-Refereed Publications

- Allen**, L. K. (2014). Key factors in the integration of writing strategies within the L2 classroom. *InterCom*.
- Allen**, L. K. (2015). In their own words. *Rhymes & Reasons: A newsletter for the Mississippi State University Department of English*.
- Allen**, L. K. (2016). Investigating affect in writing from an evidence-centered design perspective. *Analytics for Learning (A4L) Paper Series*.

Published Abstracts

- Allen**, L. K., Snow, E. L., & McNamara, D. S. (2014). Let's take a walk: An investigation into the role of flexibility in the relation between cohesion and essay quality. *Published abstract for the annual meeting of the Psychonomic Society, Long Beach, California*.
- Jacovina, M. E., Snow, E. L., **Allen**, L. K., Roscoe, R. D., & McNamara, D. S. (2014). Educational lesson formats: The appeal of animated videos versus illustrated

texts. *Published abstract for the annual meeting of the Psychonomic Society, Long Beach, California.*

Snow, E. L., **Allen**, L. K., Jacovina, M. E., & McNamara, D. S. (2014). Does control matter?: Agency within a game-based intelligent tutoring system. *Published abstract for the annual meeting of the Psychonomic Society, Long Beach, California.*

Snow, E. L., Jackson, G. T., **Varner (Allen)**, L. K., & McNamara, D. S. (2013). Learning isn't Random: Assessing how Students' Expectations Moderate Behaviors that Affect Learning. *Published abstract for the annual meeting of the Psychonomic Society, Toronto, Canada.*

Varner (Allen), L. K., Crossley, S., Snow, E. L., & McNamara, D. S. (2013). You Are Your Words: Linguistic Correlates of Cognitive Task Performance. *Published abstract for the annual meeting of the Psychonomic Society, Toronto, Canada.*

Berger, C., Crossley, S. C., **Allen**, L. K., & Verspoor, M. (2015). Random walks in learner writing: The nonlinear development of lexical and syntactic complexity. *Published abstract for the Second Language Research Forum, Atlanta, GA.*

Crossley, S. A., **Allen**, L. K., & McNamara, D. S. (2015). A diachronic analysis of first grade reading texts: Shifts and patterns detected using automatic analyses. *Published abstract for the Annual Meeting of the American Educational Research Association.*

Allen, L. K., Jacovina, M. E., & McNamara, D. S. (2016). Higher order thinking in comprehension. *Published abstract for the Annual Meeting of the American Educational Research Association.*

Allen, L. K., Roscoe, R. D., Crossley, S. A., Snow, E. L., Jacovina, M. E., & McNamara, D. S. (2016). The role of computer-based writing instruction on the accuracy of students' performance monitoring. *Published abstract for the Annual Meeting of the American Educational Research Association.*

Roscoe, R. D., **Allen**, L. K., & Patchan, M. (2016). Evaluative misalignment of students' writing assessment criteria: Hypothesized consequences and causes. *Published abstract for the Annual Meeting of the American Educational Research Association.*

Allen, L. K., Likens, A. D., Perret, C. A., & McNamara, D. S. (2017). Recurrent properties of text comprehension processes. *Published abstract for the annual meeting of the Psychonomic Society, Vancouver, BC.*

WORKSHOPS

McNamara, D. S., Crossley, S. A., & **Varner (Allen)**, L. K. (2013, July). *Designing,*

building, and using automated writing evaluation systems: A tutorial. Workshop conducted at the 23rd Annual Meeting of the Society for Text and Discourse, Valencia, Spain.

Crossley, S. A., **Allen**, L. K., & McNamara, D. S. (2015, June). *Using natural language processing tools in educational data mining.* Workshop conducted at the 8th International Conference on Educational Data Mining, Madrid, Spain.

Buckingham Shum, S., Knight, S., McNamara, D. S., **Allen**, L. K., Bektik, D., & Crossley, S. A. (2016, April). *Critical perspectives on writing analytics.* Workshop to be conducted at the 6th International Learning Analytics and Knowledge (LAK) Conference.

Knight, S., **Allen**, L. K., Gibson, A., McNamara, D. S., & Buckingham Shum, S., (2017, April). *Writing analytics literacy: Bridging from research to practice.* Workshop to be conducted at the 6th International Learning Analytics and Knowledge (LAK) Conference.

SYMPOSIA

Allen, L. K., Snow, E. L., & McNamara, D. S. (2014, August). *Cracking the creative code: Investigating the link between creativity and literacy skills.* Symposium conducted at the annual meeting of the Society for Text and Discourse. Chicago, Illinois.

PRESENTATIONS

Invited Talks

Taking a closer look: Assessing fine-grained student processes through dynamic and natural language methodologies. Learning Analytics Seminar Series, Teachers College, Columbia University, November 13, 2013 [joint presentation with Erica Snow]

Taking a closer look: Assessing fine-grained student processes through dynamic and natural language methodologies. Brownbag Series, Human and Environmental Systems Department, Arizona State University, January 22, 2014 [joint presentation with Erica Snow]

Modeling cognition: Using natural language processing techniques to better understand the cognitive processes involved in learning. BCC Educational Discourse Workshop, University of Michigan, May 4, 2015

Linguistic signatures of fine-grained learning processes. The Department of Computer Science and the Learning Science and Technologies Program, Worcester Polytechnic Institute, September 23, 2016

Learning with Text: Toward a multi-dimensional perspective on text-based communication. The Department of Psychology, University of Notre Dame, March 27, 2017

Conference Presentations

Roscoe, R. D., **Varner (Allen)**, L. K., Weston, J. L., & McNamara, D. S. (2011, November). *Mixed-method usability testing and development of the writing pal intelligent tutor*. Paper presented at the 41st Annual Meeting of the Society for Computers in Psychology, Seattle, WA.

Varner (Allen), L. K., Roscoe, R. D., & McNamara, D. S. (2011, November). *Linguistic alignment of student and teacher holistic ratings of essay quality*. Paper presented at the 41st Annual Meeting of the Society for Computers in Psychology, Seattle, WA.

Crossley, S. A., **Varner (Allen)**, L. K., & McNamara, D. S. (2013, May). *Cohesion-based prompt effects in argumentative writing*. Paper presented at the 26th Annual Florida Artificial Intelligence Research Society Conference (FLAIRS), St. Petersburg, FL.

Jackson, G. T., Snow, E. L., **Varner (Allen)**, L. K., & McNamara, D. S. (2013, May). *Game performance as a measure of comprehension and skill transfer*. Paper presented at the 26th Annual Florida Artificial Intelligence Research Society Conference (FLAIRS), St. Petersburg, FL.

Snow, E. L., Jackson, G. T., **Varner (Allen)**, L. K., & McNamara, D. S. (2013, May). *The impact of performance orientation on students' interactions and achievements in an ITS*. Paper presented at the 26th Annual Florida Artificial Intelligence Research Society Conference (FLAIRS), St. Petersburg, FL.

Varner (Allen), L. K., Jackson, G. T., Snow, E. L., & McNamara, D. S. (2013, May). *Does size matter? Investigating user input at a larger bandwidth*. Poster presented at the 26th Annual Florida Artificial Intelligence Research Society Conference (FLAIRS), St. Petersburg, FL.

Crossley, S. A., **Varner (Allen)**, L. K., & McNamara, D. S. (2013, July). *How important is the prompt? A study of prompt-based cohesion effects in essay writing*. Paper presented at the 23rd Annual Meeting of the Society for Text and Discourse, Valencia, Spain.

Crossley, S. A., **Varner (Allen)**, L. K., Roscoe, R. D., & McNamara, D. S. (2013, July). *Using automated cohesion indices as a measure of writing growth in intelligent tutoring systems and automated essay writing systems*. Paper presented at the 16th International Conference on Artificial Intelligence in Education (AIED), Memphis, TN.

- Snow, E. L., Jackson, G. T., **Varner (Allen)**, L. K., & McNamara, D. S., (2013, July). *Expectations of technology: A factor to consider in game-based learning environments*. Paper presented at the 16th International Conference on Artificial Intelligence in Education (AIED), Memphis, TN.
- Snow, E. L., Jackson, G. T., **Varner (Allen)**, L. K., & McNamara, D. S. (2013, July). Investigating the effects of off-task personalization on system performance and attitudes within a game-based environment. Paper presented at the 6th International Conference on Educational Data Mining, Memphis, TN.
- Snow, E. L., Jackson, G. T., **Varner (Allen)**, L. K., & McNamara, D. S. (2013, July). *The impact of system interactions on motivation and performance*. Poster presented at the 2013 Human-Computer Interaction International Conference.
- Varner (Allen)**, L. K., Jackson, G. T., Snow, E. L., & McNamara, D. S. (2013, July). *Linguistic content analysis as a tool for improving adaptive instruction*. Poster presented at the 16th International Conference on Artificial Intelligence in Education (AIED), Memphis, TN.
- Varner (Allen)**, L. K., Jackson, G. T., & Snow, E. L., McNamara, D. S. (2013, July). *Reading components and their relation to the writing process*. Paper presented at the 23rd Annual Meeting of the Society for Text and Discourse, Valencia, Spain.
- Varner (Allen)**, L. K., Roscoe, R. D., Crossley, S. A., & McNamara, D. S. (2013, July). *Developing pedagogically-guided threshold algorithms for intelligent automated essay feedback*. Poster presented at the 23rd Annual Meeting of the Society for Text and Discourse, Valencia, Spain.
- Varner (Allen)**, L. K., Roscoe, R. D., & McNamara, D. S. (2013, July). *Evaluative misalignment of student and teacher criteria for essay quality: An automated textual analysis*. Paper presented at the 23rd Annual Meeting of the Society for Text and Discourse, Valencia, Spain.
- Varner (Allen)**, L. K., Jackson, G. T., Snow, E. L., & McNamara, D. S. (2013, July). Are you committed? Investigating interactions among reading commitment, natural language input, and students' learning outcomes. Poster presented at the 6th International Conference on Educational Data Mining, Memphis, TN.
- Snow, E. L., Jackson, G. T., **Varner (Allen)**, L. K., & McNamara, D. S. (2013, November). *Learning isn't random: Assessing how students' expectations moderate behaviors that affect learning*. Poster presented at the Annual Meeting of the Psychonomic Society, Toronto, Canada.
- Snow, E. L., **Varner (Allen)**, L. K., Jackson, G. T., & McNamara, D. S. (2013, November). *We're watching you: Using random walks and probability*

trajectories to profile system users. Paper presented at the 43rd Annual Meeting of the Society for Computers in Psychology, Toronto, Canada.

Varner (Allen), L. K., Crossley, S., Snow, E. L., & McNamara, D. S. (2013, November). *You are your words: Linguistic correlates of cognitive task performance*. Poster presented at the Annual Meeting of the Psychonomic Society, Toronto, Canada.

Varner (Allen), L. K., Snow, E. L., Crossley, S., & McNamara, D. S. (2013, November). *Whad'ya say? Examining linguistic correlates of student's abilities*. Paper presented at the 43rd Annual Meeting of the Society for Computers in Psychology, Toronto, Canada.

Roscoe, R. D., Crossley S. A., Snow, E. L., **Varner (Allen)**, L. K. & McNamara, D. S. (2014, May). *Knowledge and comprehension correlates of human and automated essay scoring*. Paper presented at the 27th International Florida Artificial Intelligence Research Society (FLAIRS) Conference.

McNamara, D. S., **Allen**, L. K., & Snow, E. L., (2014, June). Natural language processing: Opening MOOC doors to Automatic Assessment and Enhanced Collaborative Dialog. *Paper presented in the workshop on MOOCs at the International Conference of Learning Sciences, Boulder, CO*.

McNamara, D. S., Snow, E. L., & **Allen**, L. K., (2014, June). Stealth assessment within a game-based Intelligent Tutoring System. *Paper presented in the learning analytics workshop at the International Conference of Learning Sciences, Boulder, CO*.

Roscoe, R. D., **Varner (Allen)**, L. K., Snow, E. L., & McNamara, D. S. (2014, June). *Designing usable automated formative feedback for intelligent tutoring of writing*. Paper presented at the International Conference of Learning Sciences.

Allen, L. K., Snow, E. L., & McNamara, D. S. (2014, July). *The long and winding road: Investigating the differential writing patterns of high and low skilled writers*. Paper presented at the 6th International Conference on Educational Data Mining.

Allen, L. K., Snow, E. L., & McNamara, D. S. (2014, July). *What did you say? Extracting student information from the properties of natural language*. Poster presented at the 6th International Conference on Educational Data Mining.

Crossley S. A., Kyle, K., **Allen**, L. K., & McNamara, D. S. (2014, July). *The importance of grammar and mechanics in writing assessment and instruction: Evidence from data mining*. Paper presented at the 6th International Conference on Educational Data Mining.

- Snow, E. L., Jacovina, M. E., **Allen**, L. K., Dai, J., & McNamara, D. S. (2014, July). *Entropy: A stealth assessment of agency in learning environments*. Paper presented at the 6th International Conference on Educational Data Mining.
- Snow, E. L., **Allen**, L. K., Jackson, G. T., & McNamara, D. S. (2014, July). *Tracking choices: Computational analysis of learning trajectories*. Paper presented at the 6th International Conference on Educational Data Mining. London, UK.
- Snow, E. L., **Allen**, L. K., Russell, D. G., & McNamara, D. S. (2014, July). *Who's in control?: Categorizing nuanced patterns of behaviors within a game-based intelligent tutoring system*. Paper presented at the 6th International Conference on Educational Data Mining.
- McNamara, D. S., **Allen**, L. K., & Snow, E. L., (2014, August). *You've got style: Examining the links between writing flexibility and creativity*. Paper presented in the symposium, "Cracking the creative code: Investigating the link between creativity and literacy skills" at the annual meeting of the Society for Text and Discourse. Chicago, Illinois.
- Allen**, L. K., Snow, E. L., & McNamara, D. S. (2014, August). *In other words: Investigating the role of lower and higher-level cognitive skills in the properties of written essays*. Paper presented at the annual meeting of the Society for Text and Discourse. Chicago, Illinois.
- Allen**, L. K., Snow, E. L., & McNamara, D. S. (2014, August). *Let's take a walk: An investigation into the role of flexibility in the relation between cohesion and essay quality*. Paper presented at the annual meeting of the Society for Text and Discourse. Chicago, Illinois.
- Snow, E. L., **Allen**, L. K., & McNamara, D. S. (2014, August). *Who's in control?: Self regulated behaviors and self explanation quality*. Paper presented at the annual meeting of the Society for Text and Discourse. Chicago, Illinois.
- Snow, E. L., **Allen**, L. K., & McNamara, D. S. (2014, August). *The dynamic use of narrative in writing: Assessing writing flexibility using entropy*. Paper presented at the annual meeting of the Society for Text and Discourse. Chicago, Illinois.
- Snow, E. L., McNamara, D. S., **Allen**, L. K., & Jacovina, M. E., (2014, September) *Towards formative feedback and stealth assessment in computer-based learning environments*. Paper presented at the annual Dresden Summer School for Cognitive Science.
- Allen**, L. K., Roscoe, R. D., Snow, E. L., & McNamara, D. S. (2014, November). *Gains in metacognitive awareness and writing proficiency in an intelligent tutoring system for writing*. Paper presented at the 44th annual meeting of the Society for Computers in Psychology, Long Beach, California.

- Allen**, L. K., Snow, E. L., & McNamara, D. S. (2014, November). *Let's take a walk: An investigation into the role of flexibility in the relation between cohesion and essay quality*. Poster presented at the annual meeting of the Psychonomic Society, Long Beach, California.
- Jacovina, M. E., Snow, E. L., **Allen**, L. K., Roscoe, R. D., & McNamara, D. S. (2014, November). *Classroom implementation of Writing Pal: Linking system interactions and individual differences*. Paper presented at the 44th annual meeting of the Society for Computers in Psychology, Long Beach, California.
- Jacovina, M. E., Snow, E. L., **Allen**, L. K., Roscoe, R. D., & McNamara, D. S. (2014, November). *Educational lesson formats: The appeal of animated videos versus illustrated texts*. Poster presented at the annual meeting of the Psychonomic Society, Long Beach, California.
- Russell, D. G., Snow, E. L., **Allen**, L. K., & McNamara, D.S. (2014, November). *Monitoring behavior in a game-based tutoring system*. Paper presented at the 44th annual meeting of the Society for Computers in Psychology, Long Beach, California.
- Snow, E. L., **Allen**, L. K., Jacovina, M. E., & McNamara, D. S., (2014, November). *Does agency matter?: Path analysis within a game-based system*. Paper presented at the 44th annual meeting of the Society for Computers in Psychology, Long Beach, California.
- Snow, E. L., **Allen**, L. K., Jacovina, M. E., & McNamara, D. S. (2014, November). *Does control matter?: Agency within a game-based intelligent tutoring system*. Poster presented at the annual meeting of the Psychonomic Society, Long Beach, California.
- Allen**, L. K., Snow, E. L., & McNamara, D.S. (2015, March). *Are you reading my mind? Modeling students' reading comprehension skills with Natural Language Processing techniques*. Paper presented at the 5th International Learning Analytics & Knowledge Conference (LAK'15), Poughkeepsie, NY.
- Crossley, S. A., **Allen**, L. K., Snow, E. L., & McNamara, D. S. (2015, March). *Pssst...Textual features...There is more to automatic essay scoring than just you!* Paper presented at the 5th International Learning Analytics & Knowledge Conference (LAK'15), Poughkeepsie, NY.
- Snow, E. L., **Allen**, L. K., Jacovina, M. E., Perret, C. A., & McNamara, D.S. (2015, March). *You've got style! Detecting writing flexibility across time*. Paper presented at the 5th International Learning Analytics & Knowledge Conference (LAK'15), Poughkeepsie, NY.
- Crossley, S. A., **Allen**, L. K., & McNamara, D. S. (2015, April). *A diachronic analysis of*

first grade reading texts: Shifts and patterns detected using automatic analyses. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.

Allen, L. K., Crossley, S. A., & McNamara, D. S. (2015, June). *Predicting misalignment between teachers' and students' essay scores using natural language processing tools.* Poster to be presented at the 17th International Conference on Artificial Intelligence in Education (AIED 2015).

Allen, L. K., Crossley, S. A., Snow, E. L., Jacovina, M. E., Perret, C., & McNamara, D. S. (2015, June). *Am I wrong or am I right? Gains in monitoring accuracy in an intelligent tutoring system for writing.* Poster to be presented at the 17th International Conference on Artificial Intelligence in Education (AIED 2015).

Allen, L. K., & McNamara, D. S. (2015, June). *Promoting self-regulated learning in an intelligent tutoring system for writing.* Doctoral consortium to be presented at the 17th International Conference on Artificial Intelligence in Education (AIED 2015).

Allen, L. K., & McNamara, D. S. (2015, June). *Who do you think I am? Modeling individual differences for more adaptive and effective instruction.* Doctoral consortium to be presented at the 8th International Conference on Educational Data Mining (EDM 2015).

Allen, L. K., & McNamara, D. S. (2015, June). *You are your words: Modeling students' vocabulary knowledge with natural language processing.* Paper to be presented at the 8th International Conference on Educational Data Mining (EDM 2015).

Jacovina, M. E., Snow, E. L., **Allen**, L. K., Roscoe, R. D., Weston, J. L., Dai, J., & McNamara, D. S. (2015, June). *How to visualize success: Presenting complex data in a writing strategy tutor.* Poster to be presented at the 8th International Conference on Educational Data Mining (EDM 2015).

Snow, E. L., McNamara, D. S., Jacovina, M. E., **Allen**, L. K., Johnson, A., Perret, C., Dai, J., Jackson, G. T., Likens, A., Russell, D., & Weston, J. L. (2015, June). *Promoting metacognitive awareness within a game-based intelligent tutoring system.* Poster to be presented at the 17th International Conference on Artificial Intelligence in Education (AIED 2015).

Allen, L. K., Crossley, S. A., Snow, E. L., Jacovina, M. E., Perret, C., & McNamara, D. S. (2015, July). *Am I wrong or am I right? Gains in monitoring accuracy in an intelligent tutoring system for writing.* Poster to be presented at the annual meeting of the Society for Text and Discourse. Minneapolis, MN.

Allen, L. K., McNamara, D. S., & McCrudden, M. T. (2015, July). *Change your mind: Investigating the effects of self-explanation in the resolution of misconceptions.*

Paper to be presented at the annual meeting of the Society for Text and Discourse. Minneapolis, MN.

Allen, L. K., McNamara, D. S., & McCrudden, M. T. (2015, July). *Change your mind: Investigating the effects of self-explanation in the resolution of misconceptions*. Paper to be presented at the 37th Annual Cognitive Science Society Meeting (Cog Sci 2015).

Jacovina, M. E., **Allen**, L. K., Snow, E. L., & McNamara, D. S. (2015, July). *Capturing the writing process: Keystroke logging in a writing tutor*. Paper presented at the annual meeting of the Society for Text and Discourse. Minneapolis, Minnesota.

Allen, L. K., Jacovina, M. E., & McNamara, D. S. (2016, April). *Higher order thinking in comprehension*. Poster presented in structured poster session at the Annual Meeting of the American Education Research Association.

Allen, L. K., Mills, C., Jacovina, M. E., Crossley, S. A., D'Mello, S. K., & McNamara, D. S. (2016, April). *Investigating boredom and engagement during writing using multiple sources of information: The essay, the writer, and keystrokes*. Paper to be presented at the 6th International Learning Analytics and Knowledge (LAK) Conference.

Allen, L. K., Roscoe, R. D., Crossley, S. A., Snow, E. L., Jacovina, M. E., & McNamara, D. S. (2016, April). *The role of computer-based writing instruction on the accuracy of students' performance monitoring*. Poster presented at the Annual Meeting of the American Education Research Association.

Roscoe, R. D., **Allen**, L. K., & Patchan, M. (2016, April). *Evaluative misalignment of students' writing assessment criteria: Hypothesized consequences and causes*. Poster presented at the Annual Meeting of the American Education Research Association.

Knight, S. **Allen**, L. K., Littleton, K., Rienties, B., & Tempelaar, D. (2016, June). *Writing analytics for epistemic features of student writing*. Paper presented at the 12th Annual Meeting of the International Conference of the Learning Sciences.

Allen, L. K., Jacovina, M. E., Dascalu, M., Roscoe, R. D., Kent, K., Likens, A. D., & McNamara, D. S. (2016, July). *Capturing the writing process: Keystroke logging in a writing tutor*. Poster presented at the Annual Meeting of the Society for Text and Discourse. Kassel, Germany.

Allen, L. K., Jacovina, M. E., & McNamara, D. S. (2016, July). *The cohesive properties of text comprehension processes*. Poster presented at the Annual Meeting of the Society for Text and Discourse. Kassel, Germany.

- Allen**, L. K., Perret, C., & McNamara, D. S. (2016, July). *Linguistic signatures of cognitive processes during writing*. Paper presented at the Annual Meeting of the Society for Text and Discourse. Kassel, Germany.
- Dascalu, M., **Allen**, L. K., & McNamara, D. S. (2016, July). *Modeling comprehension processes via automated analyses of dialogism*. Paper presented at the Annual Meeting of the Society for Text and Discourse. Kassel, Germany.
- Allen**, L. K., Perret, C., & McNamara, D. S. (2016, August). *Linguistic signatures of cognitive processes during writing*. Paper presented at the 38th Annual Meeting of the Cognitive Science Society (Cog Sci 2016). Philadelphia, PA.
- Allen**, L. K., Jacovina, M. E., & McNamara, D. S. (2016, August). *Cohesive features of deep text comprehension processes*. Paper presented at the 38th Annual Meeting of the Cognitive Science Society (Cog Sci 2016). Philadelphia, PA.
- Crossley, S. A., Dascalu, M., Trausan-Matu, S., **Allen**, L. K., & McNamara, D. S. (2016, August). *Document cohesion flow: Striving towards coherence*. Poster presented at the 38th Annual Meeting of the Cognitive Science Society (Cog Sci 2016). Philadelphia, PA.
- Allen**, L. K., Jacovina, M. E., Dascalu, M., Roscoe, R. D., Kent, K., Likens, A. D., & McNamara, D. S. (2016, November). *Capturing the writing process: Keystroke logging in a writing tutor*. Paper presented at the Annual Meeting of the Society for Computers in Psychology, Boston, MA.
- Magliano, J. P., **Allen**, L. K., Feller, D., Millis, K. K., McNamara, D. S. (2016, November). *Rethinking RSAT: Exploring the relationships between reading strategies and cohesion in think-aloud protocols*. Paper presented at the 46th Annual Meeting of the Society for Computers in Psychology, Boston MA.
- Allen**, L. K., Perret, C., Likens, A., & McNamara, D. S. (2017, March). *What'd you say again? Recurrence quantification analysis as a method for analyzing the dynamics of discourse in a reading strategy tutor*. Paper presented at the International Learning Analytics and Knowledge Conference. Vancouver, BC.
- Allen**, L. K., Likens, A., & McNamara, D. S. (2017, May). *Recurrence Quantification Analysis: A technique for the dynamical analysis of student writing*. Paper presented at the Annual Florida Artificial Intelligence Research Society International Conference (FLAIRS). Marco Island, FL.
- Allen**, L. K., Perret, C., Guerrero, T., & McNamara, D. S. (2017, July). *You talkin' to me? The role of audience in the generation of explanations*. Poster presented at the Annual Meeting of the Society for Text and Discourse. Philadelphia, PA.
- Allen**, L. K., Perret, C., Likens, A. D., & McNamara, D. S. (2017, July). *Recurrence Quantification Analysis as a method for analyzing comprehension dynamics*.

Paper presented at the Annual Meeting of the Society for Text and Discourse. Philadelphia, PA.

Dascalu, M., **Allen**, L. K., McNamara, D. S., Trausan-Matu, S., & Crossley, S. A. (2017, July). *Modeling comprehension processes via automated analyses of dialogism*. Paper presented at the Annual Meeting of the Cognitive Science Society. London, UK.

Dascalu, M., Jacovina, M. E., Soto, C., **Allen**, L. K., Guerrero, T. & McNamara, D. S. (2017, July). *Teaching iSTART to understand Spanish*. Paper to be presented at the International Conference on Artificial Intelligence in Education (AIED). Wuhan, China.

Likens, A. D., **Allen**, L. K., & McNamara, D. S. (2017, July). Keystroke dynamics predict essay quality. Paper presented at the Annual Meeting of the Cognitive Science Society. London, UK.

McCarthy, K. S., Guerrero, T. A., Kent, K. M., **Allen**, L. K., McNamara, D. S., Chao, S., Steinberg, J., O'Reilly, T., & Sabatini, J. (2017, July). *Learning from texts in a scenario-based assessment: General and topic-specific background knowledge*. Paper presented at the Annual Meeting of the Society for Text and Discourse. Philadelphia, PA.

Ocuppaugh, J., Almeda, M. A., Slater, S., Baker, R., & **Allen**, L. K. (2017, July). *Lexical sophistication, learning, and engagement in math problems*. Paper presented at the Annual Meeting of the Society for Text and Discourse. Philadelphia, PA.

Allen, L. K., Likens, A. D., & McNamara, D. S. (2017, November). *An examination of students' adaptive writing behaviors*. Paper presented at the Annual Meeting of the Society for Computers in Psychology. Vancouver, BC.

Allen, L. K., Likens, A. D., Perret, C. A., & McNamara, D. S. (2017, November). *Recurrent properties of text comprehension processes*. Poster presented at the Annual Meeting of the Psychonomic Society. Vancouver, BC.

Likens, A. D., McCarthy, K. M., **Allen**, L. K., & McNamara, D. S. (2017, November). *Let's walk about that: Random walk analyses contextualize performance in an intelligent tutoring system*. Paper presented at the Annual Meeting of the Society for Computers in Psychology. Vancouver, BC.

Allen, L. K., Likens, A. D., & McNamara, D. S. (2018, March). A multi-dimensional analysis of writing flexibility in an automated writing evaluation system. Paper to be presented at the International Learning Analytics and Knowledge Conference. Sydney, Australia.

Likens, A. D., McCarthy, K. M., **Allen**, L. K., & McNamara, D. S. (2018, March). Recurrence Quantification Analysis as a method for studying text comprehension

dynamics. Paper to be presented at the International Learning Analytics and Knowledge Conference. Sydney, Australia.

Local Presentations

Allen, L. K., Jackson, G. T., Snow, E. L., & McNamara, D. S. (2013, December). *Are you committed? Investigating interactions among reading commitment, natural language input, and students' learning outcomes*. Poster presented at the annual University of Arizona / Arizona State Conclave, Tempe, Arizona.

Allen, L. K., Snow, E. L., & McNamara, D. S. (2014, December). *Let's take a walk: An investigation into the role of flexibility in the relation between cohesion and essay quality*. Poster presented at the annual University of Arizona / Arizona State Conclave, Tempe, Arizona.

Jacovina, M. E., Snow, E. L., **Allen**, L. K., Roscoe, R. D., & McNamara, D. S. (2014, December). *Educational lesson formats: The appeal of animated videos versus illustrated texts*. Poster presented at the annual University of Arizona / Arizona State Conclave, Tempe, Arizona.

Snow, E. L., **Allen**, L. K., Jacovina, M. E., & McNamara, D. S. (2014, December). *Does agency matter?: Agency within a game-based intelligent tutoring system*. Poster presented at the annual University of Arizona / Arizona State Conclave, Tempe, Arizona.

Perret, C., **Allen**, L. K., Jacovina, M. E., & McNamara, D. S. (2015, December). *The relationship between individual differences and essay quality*. Poster presented at the annual University of Arizona / Arizona State Conclave, Tucson, Arizona.

PROFESSIONAL SERVICES

2017-present	Steering Committee Society for Computers in Psychology
2016-present	Program Committee The International Meeting of the Learning Analytics and Knowledge Conference, Vancouver, BC, Canada
2016	Award Selection Committee Member AERA Division C, Early Career Award
2015-2016	Program Committee Workshop on the Innovative Use of NLP for Building Educational Applications (BEA10), Denver, CO
2015	Volunteer ASU Emerge 2015, Scottsdale, AZ
2014-2016	Volunteer Education Data Mining Conference, London, UK
2014	Symposium Chair Society of Text and Discourse Conference, Chicago, IL

- 2014 **Student Organizer**
Cognitive Science Symposium, Tempe, AZ
- 2012-2014 **Student Organizer**
ASU / UA Department of Psychology Conclave, Tempe, AZ
- 2012 **Student Organizer**
Cognitive Science Recruitment Weekend, Tempe, AZ

REVIEWING

- 2017-present Contemporary Educational Psychology
- 2016-present International Journal of Artificial Intelligence in Education
- 2016-present Journal of Writing Research
- 2016-present Reading in a Foreign Language
- 2016 Handbook of Learning Analytics and Educational Data Mining
- 2015 Big Data and Society
- 2015 Workshop on the Innovative Use of NLP for Building Educational Applications
- 2015-present Cognitive Science Society Meeting (Cog Sci)
- 2014-present Journal of Educational Psychology
- 2014-present Language Learning and Technology
- 2014 Journal of Educational Data Mining
- 2014 Transactions on Learning Technologies
- 2014 Technology, Knowledge and Learning
- 2014-present Reading and Writing
- 2013-present Discourse Processes
- 2013-present International Conference of the Learning Sciences
- 2013 Journal of International Migration and Integration
- 2013-present American Educational Research Association, Division C, Section 2a
- 2013 Artificial Intelligence in Education Conference, Doctoral Consortium
- 2013 Artificial Intelligence in Education Conference, Main Track
- 2013 Florida Artificial Intelligence Research Society Conference, ITS Track

PROFESSIONAL SOCIETIES

- 2016-present American Educational Research Association
- 2015-present American Psychological Association
- 2015-present Cognitive Science Society
- 2015-present Psychonomic Society
- 2015-present Society for Learning Analytics Research
- 2014-present International Society of the Learning Sciences
- 2013-present Society for Computers in Psychology
- 2012-present International Artificial Intelligence in Education Society
- 2012-present International Educational Data Mining Society
- 2012-present Society for Text and Discourse

TEACHING EXPERIENCE

- 2018 **Primary Instructor, Language and Thought**
Mississippi State University
- 2017 **Primary Instructor, Graduate Research Methods**
Mississippi State University
- 2015 **Teaching Assistant, First Year Seminar [two sections]**
Arizona State University
- 2013 **Teaching Assistant, Memory and Cognition**
Arizona State University

PRIOR RESEARCH EXPERIENCE

- 2015 **Graduate Teaching Assistant, Department of Psychology**
Arizona State University
- 2011-2017 **Graduate Research Assistant, Learning Sciences Institute**
Arizona State University
- 2011-2017 **Graduate Research Assistant, Department of Psychology**
Arizona State University
- 2010-2011 **Research Assistant, Institute for Intelligent Systems**
University of Memphis
- 2009-2010 **Undergraduate Research Assistant, English Department**
Mississippi State University
- 2008-2009 **Undergraduate Research Assistant, Industrial Engineering**
Department Mississippi State University

MENTORING EXPERIENCE

- 2015-2017 **Tricia Guerrero, Research Specialist**
Arizona State University
- 2015-2017 **Kevin Kent, Research Specialist**
Arizona State University
- 2012-present **Cecile Perret, Undergraduate Student; Research**
Assistant
Arizona State University
- 2012-2017 **Melissa Stone, Undergraduate Student; Research**
Specialist
Arizona State University
- 2012-2014 **Kirra Iler, Undergraduate Research Assistant**
Arizona State University
- 2012-2014 **Megan Johnson, Undergraduate Research Assistant**
Arizona State University
- 2012-2014 **Alli Klassen, Undergraduate Research Assistant**
Arizona State University