

Derek Koehl

Education

- Estimated 2026
- **Ph.D. Applied Experimental Psychology**, The University of Alabama in Huntsville
Dissertation: *Human perceptions of social intelligence in large language models* [forthcoming]
 - **M.A. Psychology**, The University of Alabama in Huntsville
Thesis: *Analyzing trust in automation using large language models*
 - **M.A. History**, The University of Alabama in Huntsville
Thesis: *Christians, pagans, and stories in the British Isles: The intersection of narratives and ideologies*
 - **M.Ed. Educational Technology**, The University of Texas in Brownsville
 - **B.A. English Language and Composition**, University of North Texas

Employment History

- 2025 –
- **Lecturer**, The University of Alabama in Huntsville
Interdisciplinary Research Methods
Interdisciplinary Capstone Research
Artificial Intelligence in Human and Social Contexts
Imperial Rome
Craft of History
- 2018 – 2025
- **Research Associate**, The University of Alabama in Huntsville
Earth System Science Center | NASA Marshall Space Flight Center
Interagency Implementation and Advanced Concepts Team
Machine learning and artificial intelligence research and development
- 2017 – 2025
- **Adjunct Lecturer**, The University of Alabama in Huntsville
Interdisciplinary Research Methods
Interdisciplinary Capstone Research
Artificial Intelligence in Human and Social Contexts
Intensive Language and Culture Program
- 2011 – 2017
- **Executive Director**, VerbalEzye
Launched a 501(c)3 charitable non-profit whose mission is to foster, promote and support the development of young people as creative writers and professionals. Developed and expanded a creative writing curriculum for youth educators.
- 2009 – 2017
- **Secondary ESOL Educator**, Clayton County Public Schools
- 2003 – 2009
- **Practice Director, Microsoft Solutions**, Fujitsu Consulting
Responsible for business development, strategy and IP development, business and staff management, oversight of client delivery and training, and sales support.

Research Publications

Journal Articles

Koehl, D. and Vangsness, L. (2023). Measuring latent trust patterns in large language models in the context of human-AI teaming. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, vol. 67 no. 1, pp. 504–511.

Conference Papers

Koehl, D. and Vangsness, L. (2024). Toward a Linguistic Fingerprint™ of trust. *ASPIRE 2024: The Human Factors and Ergonomics Society International Annual Meeting*.

Kaulfus, A., Maskey, M., Hall, A., *et al.* (2022). NASA's Commercial SmallSat Data Acquisition Program data stewardship and data management system. *102nd American Meteorological Society Annual Meeting*.

Kaulfus, A. S., Maskey, M., Hall, A., *et al.* (2022). Improving commercial data discoverability and access for NASA's Commercial Smallsat Data Acquisition (CSDA) Program. *AGU Fall Meeting 2022*.

Acharya, A., Davis, C., **Koehl, D.**, *et al.* (2021). Verb sense disambiguation for densifying knowledge graphs in Earth science. *American Geophysical Union 2021*.

Davis, C., **Koehl, D.**, Adhikari, S., Ramasubramanian, M., Gurung, I., and Ramachandran, R. (2021). Information extraction on an Earth science knowledge graph built with semantic parsing. *Proceedings of the American Geophysical Union Fall Meeting 2021*.

Ramachandran, R., Ramasubramanian, M., Iksha Gurung, *et al.* (2021). Augmenting data systems with prediction based embeddings. *2021 IEEE International Geoscience and Remote Sensing Symposium IGARSS*.

Davis, C., Ramasubramanian, M., **Koehl, D.**, *et al.* (2020). ES2Vec: Earth science metadata suggestions and analogical reasoning. *AGU Fall Meeting 2020*.

Koehl, D., Davis, C., Nair, U., and Ramachandran, R. (2020). Analogy-based assessment of domain-specific word embeddings. *Proceedings of the IEEE SoutheastCon2020*.

Koehl, D., Nair, U., Ramachandran, R., Davis, C., and Maskey, M. (2020). Exploring Earth science applications using word embeddings. *European Geosciences Union (EGU) 2020*.

Zhang, M., Zhang, J., Ramachandran, R., Lee, T. J., and **Koehl, D.** (2019). NASA enterprise knowledge network. *American Geophysical Union, Fall Meeting 2019*.

Presentations and White Papers

Koehl, D. and Vangsness, L. (2024). Toward a Linguistic Fingerprint™ of trust. Presentation. Department of Defense Human Factors Engineering Technical Advisory Group. Marshall Space Flight Center, Huntsville, AL.

Koehl, D. (2023). *Pedagogy in the age of ChatGPT*. Keynote. TeachGPT: Practical AI for Educators in HigherEd. The University of Alabama in Huntsville, Huntsville, AL.

Koehl, D. and Vangsness, L. (2023). *Measuring latent trust patterns in large language models in the context of human-AI teaming*. Presentation. RAM XV Training Summit. Huntsville Society of Reliability Engineers. Huntsville, AL.

Koehl, D., Word, A., Duan, X., *et al.* (2019). *Informing knowledge graphs: Beyond the triple*. Poster. Science, Technology, and Engineering Expo. Marshall Space Flight Center, Huntsville, AL.

Word, A. and **Koehl, D.** (2018). *A good fit: Finding the best tools for the job(s)*. Presentation. UAH System Scholars Institute. Birmingham, AL.

Koehl, D. (2017). *Designing language in educational settings*. White paper. The University of Alabama in Huntsville.

Simpson, J., Word, A., **Koehl, D.**, and Tsimika-Chronis, E. (2017). *There's more to math than numbers: Teacher talk, word problems & ELLs*. Presentation. Annual Meeting of the Alabama Council of Teachers of Math. Birmingham, AL.

Word, A., Tsimika-Chronis, E., and **Koehl, D.** (2017). *DIAL in the message: Differentiating instructional/academic language*. Presentation. Annual Meeting of the Southeast TESOL Regional Conference. Birmingham, AL.

Koehl, D. (2006). *Increasing human resources efficiencies through optimized workflow management*. White paper. Fujitsu Consulting.

Books and Chapters

Simpson, M. S., Cockerill, G., Word, A., and **Koehl, D.** (2020). Faculty and student perceptions of university course evaluations. In Russ-Eft, D. and Sleezer, C. (Eds.), *Case Studies in Needs Assessment*.

Koehl, D., Piggott, K., Salomon, P., Kenyon, W., and Ruffin, A. (Eds.) (2017). *Shattering the silence*.

Koehl, D., Beach, K., Piggott, K., and Baker, L. (Eds.) (2016). *Treading unique paths*.

Koehl, D. and Beach, K. (Eds.) (2015). *Pushing past limits*.

Koehl, D., Beach, K., Piggott, K., Feldman, R., and Stevenson, K. (Eds.) (2015). *Reflecting our greatness*.

Koehl, D., Feldman, R., Stevenson, K., and Srivastava, S. (Eds.) (2014). *Reaching beyond the skies*.

Koehl, D. and Stephens, T. (Eds.) (2014). *Exploring hidden paths*.

Koehl, D., Green, R., and Stephens, T. (Eds.) (2013). *Springing from halls of marble*.

Koehl, D. and Stephens, T. (Eds.) (2013). *Racing toward dawn*.

Research and Teaching Interests

- Experimental Psychology
- Human Factors Psychology
- Interdisciplinary Research
- Artificial Intelligence (AI)
- AI Cognition
- Statistics

Product Development

- **Linguistic Fingerprint (patents pending)**
Technology that isolates the Linguistic Fingerprint™ of latent constructs such as trust in artificial intelligence large language model sentence embeddings, allowing for real time detection and monitoring of those latent constructs in natural language statement in experimental and real-world scenarios.

Product Development (continued)

■ **DIAL Training Materials and Online Training Modules**

Training components designed and developed for use in in-person training sessions with K-12 educators and administrators. Instructional components designed and developed for online training programs.

■ **Writers Workshop Curriculum**

Creative writing curriculum for use with young people in grades 6 – 12.

■ **SOLUTIONS**

An educational technology product that utilizes gameplay, creative writing and storytelling to enable learners to effect targeted behavior change objectives.

Miscellaneous Experience

Awards and Achievements

2024	■ Charger Innovation Fund: \$24,928 , The University of Alabama in Huntsville.
	■ Graduate Poster Session: 1st Place , The University of Alabama in Huntsville.
2023	■ William Wessels Scholarship Award , RAM XV Training Summit.
2015	■ Young Writers Training Initiative: \$10,000 , United Parcel Service. z
2014	■ Certifying Youth in Information Technology: \$10,000 , Best Buy.

Certifications

Alabama Professional Certificate	■ English (6-12) English for Speakers of Other Languages
Georgia Educator Certificate	■ English (6-12) ESOL Endorsement

Professional Memberships

- **Human Factors and Ergonomics Society**
 - **Psi Chi, The International Honor Society in Psychology**
 - **Phi Alpha Theta, The National History Honor Society**
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