Department of Biostatistics and Medical Informatics Seminar

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Friday, Mar 13, 2026
12:00-1:00 pm
Morgridge Hall Seminar Room 7650
Zoom Meeting: 966 3372 9112
https://uwmadison.zoom.us/j/96633729112?pwd=tHFc9i1dAAgmXe05uWtw8wXBIQZxGB.1
Passcode: 621125

In Machines We Trust? Leveraging AI to Strengthen Research Rigor and Integrity

Abstract: Concerns around rigor, transparency, and reproducibility have increasingly come to the forefront of biomedical research. In response, the research community has developed a range of standards, guidelines, and best practices to improve how studies are conducted and reported. However, with the rapid growth of scientific publications, manual oversight alone is no longer sufficient. In this talk, I will explore how AI, specifically natural language processing (NLP), methods can support efforts to enhance the rigor and integrity of biomedical research communication. Focusing on textual artifacts such as clinical trial protocols, research manuscripts, and published articles, I will highlight two projects from our lab: (1) evaluating methodological and reporting quality in clinical trial publications, and (2) assessing citation integrity in the biomedical literature. I will conclude with a discussion of key challenges and opportunities for developing AI/NLP systems that support rigorous science.

Bio: Dr. Halil Kilicoglu is an Associate Professor in the School of Information Sciences (iSchool) at the University of Illinois Urbana-Champaign. He specializes in natural language processing (NLP), artificial intelligence/machine learning (AI/ML), and knowledge representation, with a focus on biomedical applications. His research centers on extracting and structuring knowledge buried in textual artifacts to advance biomedical discovery, support scholarly communication, and improve healthcare outcomes. A key area of his work involves developing automated methods to assess the rigor, transparency, and integrity of biomedical publications. Before joining the iSchool faculty in 2019, he was a research scientist at the U.S. National Library of Medicine, National Institutes of Health (NLM/NIH), where he led the Semantic Knowledge Representation project. His research has been supported by NIH, AHRQ, and HHS Office of Research Integrity.

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