One path to improving the quality of student writing has involved the use of a peer review process, often supported by web-based technology. The long-term goal of our research is to use Natural Language Processing to address three core problems in peer-review of writing: reviews are often stated in ineffective ways, reviews and papers do not focus on important paper aspects, and authors do not have a process for organizing paper revisions. This talk will present our research on automatically predicting the helpfulness of peer reviews, one important task for improving the quality of feedback received by students, as well as for helping students write better reviews.

We first examine whether standard product review analysis techniques also apply to our new context of peer reviews. We also investigate the utility of incorporating additional specialized features tailored to peer review. Finally, we investigate how different types of perceived helpfulness might influence the utility of features for automatic prediction. This work is done in collaboration with Wenting Xiong, Christian Schunn, and Kevin Ashley, University of Pittsburgh.

Diane Litman is Professor of Computer Science, Senior Scientist with the Learning Research and Development Center, and faculty with the Graduate Program in Intelligent Systems, all at the University of Pittsburgh. She has been working in the field of artificial intelligence since she received her Ph.D. degree in Computer Science from the University of Rochester. Before joining Pitt, she was a member of the Artificial Intelligence Principles Research Department, AT&T Labs - Research (formerly Bell Laboratories). Dr. Litman’s current research focuses on enhancing the effectiveness of educational technology through the use of spoken and natural language processing, affective computing, and machine learning and other statistical methods. Dr. Litman has been Chair of the North American Chapter of the Association for Computational Linguistics, has co-authored multiple papers winning best paper awards, and has been awarded Senior Member status by the Association for the Advancement of Artificial Intelligence.