1145-K5-561   **James H Fife*** (`jfife@ets.org`). *The automated scoring of mathematics responses containing text and equations.*

The immediate automated scoring of digitally-captured constructed responses is an important and necessary feature of large-scale summative assessments, where efficient and cost-effective scoring is required, and of smaller-scale formative assessments, where immediate feedback is part of the learning process. For computer-delivered mathematics tests, constructed-response questions often ask students to explain their answer to a problem. When these explanations involve only next, natural language processing (NLP) techniques can frequently be used to reliably score the responses automatically. But most of these explanations will also involve equations, and NLP techniques cannot analyze equations. In this talk, I will describe a project that combines NLP techniques with a computer algebra system (CAS) to score responses consisting of text and equations. Preliminary results indicate that the combination NLP+CAS produces scores that more closely agree with human scores than NLP alone. (Received September 10, 2018)