1145-11-111 **Jim Brown**, **Hugh Geller**, **Rico Vicente** and **Alexandra Walsh***
(alexandra_walsh@brown.edu), Box 5949, 69 Brown Street, Providence, RI 02906. *Eigenform Product Identities for Degree-Two Siegel Modular Forms.* Preliminary report.

In his paper "On Eigenform Relations Between Monomial Series" (2000), Eknath Ghate proves that there are finitely many pairs of full-level, degree-one eigenforms f and g whose product fg is also an eigenform. We prove a partial generalization of this theorem for degree-two Siegel modular forms. When FG is an Eisenstein series, we use the Siegel Φ operator, a mapping from Siegel degree-two to degree-one modular forms, to show that there is only one pair of Eisenstein series eigenforms F and G for which FG is an eigenform. When FG is a cusp form, we use the Rankin-Selberg method to give a condition under which FG cannot be an eigenform. We provide one example of an eigenform product for which FG is a cusp form, and we conjecture that this is the only such example. (Received August 01, 2018)