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T. Alden Gassert* (gassert@hws.edu), 300 Pulteney St, Geneva, NY 14456, and **Caleb Shor** (caleb.shor@wne.edu), 1215 Wilbraham Rd, Springfield, MA 01119. *Sylvester sums of compound sequence semigroup complements.*

In this talk, we consider the complement $NR(G)$ of a numerical semigroup generated by a compound sequence G . By generalizing a result of Tuentler, we are able to compute sums of powers of elements in $NR(G)$, also known as Sylvester sums. As an application, we compute the weights of higher-order Weierstrass points on suitable towers of complex algebraic curves. (Received September 26, 2017)