1116-11-1283 **Rachel Jade Domagalski*** (domag1rj@cmich.edu), MI, and **Dana Lacey** (dmlacey@noctrl.edu), **James E. Pangelinan III** (jamespangelinan3@gmail.com) and **Marly Cormar** (marlycormar@ufl.edu). *On the Catenary Degree of Numerical Monoids Generated by a Generalized Arithmetic Sequence.*

We give a closed form for the catenary degree of any element in a numerical monoid generated by a generalized arithmetic sequence in embedding dimension three. While it is known in general that the largest and smallest nonzero catenary degrees are attained at Betti elements, the current literature contains no information about the other realizable catenary degrees. By classifying each element in terms of its Betti element divisors, we identify all the catenary degrees achieved and where they occur. In addition, our research provides the dissonance number and the period value, even though previous works have shown only that the catenary degree is periodic using a non-existential proof. (Received September 18, 2015)