1125-11-1115 **Amita Malik*** (amalik10@illinois.edu), University of Illinois at Urbana-Champaign, and **Armin Straub**. *Sporadic Apéry-like numbers modulo primes.*

At the ICM in 1978, R. Apéry presented a proof of the irrationality of $\zeta(3)$. In this proof, he introduced a sequence of integers, now known as Apéry sequence. Apéry-like numbers are special integer sequences, studied by Beukers and Zagier, which are modeled after Apéry numbers. Among their remarkable properties are connections with modular forms, Calabi-Yau differential equations, and a number of p-adic properties, some of which remain conjectural. A result of Gessel shows that Apéry's sequence satisfies Lucas congruences. We prove corresponding congruences for all sporadic Apéry-like sequences. While, in some cases, we are able to employ approaches due to McIntosh, Samol–van Straten and Rowland–Yassawi to establish these congruences, there are few others for which we require a finer analysis. As an application, we investigate modulo which numbers these sequences are periodic. In particular, we show that the Almkvist–Zudilin numbers are periodic modulo 8, a special property which they share with the Apéry numbers. This is joint work with Armin Straub. (Received September 14, 2016)