1135-VS-2572 **Clifford Blakestad*** (clifford.blakestad@colorado.edu), University of Colorado Boulder, Department of Mathematics, UCB 395, Boulder, CO 80309, and **David Grant**. *Universal p-adic sigma and Weierstrass zeta functions.* Preliminary report.

Mazur and Tate introduced a p-adic σ function defined on the kernel of reduction of an ordinary elliptic curve defined over a complete discrete valuation domain of residual characteristic $p > 2$, which they used to compute p-adic local heights. The logarithmic derivative of this function is a variant of a Weierstrass ζ function. From the perspective of p-adic integrality, the ζ function is the more natural object. For $p > 3$ we produce a ζ function as a Laurant series from a limit of mod p^n objects on a universal ordinary Weierstrass model, deducing the interality of the σ function via an explicit comparison between the universal curve and its quotient by the canonical p-torsion subgroup. (Received September 26, 2017)