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**Jacqueline Anderson\*** ([jacqueline.anderson@bridgew.edu](mailto:jacqueline.anderson@bridgew.edu)). *p-adic Mandelbrot sets and their boundaries.*

Let  $f(z) = z^d + a_{d-1}z^{d-1} + \cdots + a_1z \in \mathbb{C}_p[z]$  be a polynomial of degree  $d$ . We say  $f$  is *post-critically bounded*, or PCB, if all of its critical points have bounded orbits under iteration of  $f$ . Let  $\mathcal{M}_{d,p}$  be the set of such PCB polynomials. This is the  $p$ -adic Mandelbrot set of degree  $d$ . It is known that if  $p \geq d$ , then  $f \in \mathcal{M}_{d,p}$  if and only if all critical points of  $f$  have  $p$ -adic absolute value less than or equal to 1. When  $p < d$ , however, these sets are much more interesting. We will discuss this case and how the boundaries of these sets exhibit properties similar to that of the complex Mandelbrot set. (Received September 03, 2013)