Brian Nakamura*, bnaka@math.rutgers.edu, and Doron Zeilberger. Counting permutations with exactly r occurrences of a pattern.

We will consider the problem of enumerating permutations that contain exactly $r$ occurrences of a specified pattern. Previous work by Noonan and Zeilberger considered this problem for a few different patterns (such as the pattern 123) and gave a concrete method of enumeration for $r \leq 2$. We will discuss a modification to their approach that allows us to enumerate such permutations for more patterns as well as for larger $r$ values. (Received September 25, 2012)