1077-11-285 **Paul Pollack*** (pollack@math.ubc.ca), University of British Columbia, Department of Mathematics, 1984 Mathematics Road, Room 121, Vancouver, BC V6T 1Z2, Canada. *Congruence properties of the multiplicative partition function.*

Let $f(N)$ be the number of unordered factorizations of N, where a *factorization* is a way of writing N as a product of integers all larger than 1. For example, $f(30) = 5$, corresponding to the five factorizations

$$2 \cdot 3 \cdot 5, \quad 5 \cdot 6, \quad 3 \cdot 10, \quad 2 \cdot 15, \quad \text{and} \quad 30.$$

The function $f(N)$ is an analogue in the multiplicative setting of the classical partition function $p(N)$. Congruence properties for $p(N)$ have been extensively investigated since the pioneering work of Ramanujan in the early part of the twentieth century.

In this talk, we outline a proof that for any given residue class, there is a well-defined proportion of the time that f lands there. Moreover, this proportion is positive as long as the residue class contains at least one value of f. The proof allows one to compute these proportions; as a (perhaps surprising) example, $f(N)$ is odd about 57% of the time. We mention some of the issues that arise in the computation of these densities. (Received August 18, 2011)