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Gregory S. Warrington* (gswarrin@uvm.edu), Department of Mathematics and Statistics,
University of Vermont, 16 Colchester Ave., Burlington, VT 05405, and **Nicholas A. Loehr**.

Infinitely many new partition statistics.

Traditionally, the generating function $1/((1 - tq)(1 - tq^2)(1 - tq^3)\dots)$ enumerates partitions by area (the power of q) and number of parts (power of t). We give an infinite number of new interpretations for the power of t . That these new statistics are equidistributed with the length of a partition is proven via explicit bijections. These bijections involve various combinatorial constructions such as oriented trees and Eulerian tours on directed multigraphs. This is joint work with Nick Loehr. (Received August 29, 2009)