1019-11-45   **Ken Ono*** (`ono@math.wisc.edu`), Dept. of Mathematics, University of Wisconsin, Madison, WI 53706, and **Kathrin Bringmann**, Dept. of Mathematics, University of Wisconsin, Madison, WI 53706. *Dyson's challenge for the future: The mock theta functions.*

I will discuss recent work with Kathrin Bringmann on mock theta functions. The mock theta functions are a collection of 22 bizarre q-series which play roles in many areas of number theory. These strange series have been connected to partitions, modular forms, Hecke L-functions, even Galois representations etc... Inspired by Zwegers' recent PhD thesis, we revisit the mock theta functions and Freeman Dyson's challenge for the future. (Received August 01, 2006)