1046-A2-712   **Mitsuo Kobayashi**, **Paul Pollack** and **Carl Pomerance*** (`carl.pomerance@dartmouth.edu`), Department of Mathematics, Dartmouth College, Hanover, NH 03755. *Sociable numbers: new developments on an ancient problem.*

Consider iterating the function which sends a natural number to the sum of its proper divisors. A fixed point for this system, such as 6 or 28, is called *perfect*, while a number belonging to a cycle of length 2, such as 220 or 284, is called *amicable*. Known to Euclid and Pythagoras, some scholars have even found allusions to perfect and amicable numbers in the Old Testament. *Sociable* numbers are the natural generalization of perfect and amicable numbers to cycles of arbitrary length—they are mere youngsters, having been studied for only 102 years! This talk will report on some recent results on the distribution of sociable numbers within the natural numbers. (Received September 10, 2008)

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