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**Jeffrey A Mermin\*** ([mermin@math.ku.edu](mailto:mermin@math.ku.edu)), Department of Mathematics, 405 Snow Hall, 1460 Jayhawk Blvd, Lawrence, KS 66045-7523, and **Satoshi Murai**. *The Lex-plus-powers conjecture holds for monomials.*

Let  $F=(f_1, \dots, f_s)$  be a homogeneous regular sequence with  $\text{degree}(f_i) = e_i$ , and let  $P = (x_1^{e_1}, \dots, x_s^{e_s})$  be pure powers in the same degrees.

Let  $I$  be any homogeneous ideal containing  $F$ , and let  $L \supset P$  be the lex-plus- $P$  ideal having the same Hilbert function. ( $L$  was conjectured to exist by Eisenbud, Green, and Harris.)

Graham Evans conjectured that the graded Betti numbers of  $L$  are larger than or equal to those of  $I$ . We prove this conjecture in the special case that  $F$  consists of monomials. (Received August 07, 2008)