

1125-VI-2335 **J Donato Fortin*** (dfortin@jwu.edu), Johnson & Wales University, 801 West Trade St,
Charlotte, NC 28202. *Wow Them: Achieve the Maximum Error in Ill-Conditioned Systems.*

Ill-conditioned linear systems ($Ax = b$) admit potentially violent perturbations of the solution from relatively small changes to the coefficient matrix (A) or the RHS (b). Unexpected results evoke the "wow" factor and illustrate the potentially disastrous effects of observation, approximation, or round-off error. The way is shown to achieve the maximum error in case of small perturbations to either the coefficient matrix or the RHS. Explanations are via the singular value decomposition (SVD), but applications are accessible for any level course in which linear equations are solved. (Received September 20, 2016)