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**James Price\*** ([jprice@math.purdue.edu](mailto:jprice@math.purdue.edu)), Department of Mathematics, Purdue University, 150 N. University Street, Lafayette, IN 47901. *Weighted Homogeneous Polynomials and the Jacobian in Two Variables*. Preliminary report.

In the early 1970s, Shreeram Abhyankar began giving lectures about his research on the Jacobian Conjecture. This talk will be concerned with the applications of this work to the Jacobian of two weighted homogeneous polynomials, i.e.  $J(F, G) = F_X G_Y - F_Y G_X$ . It turns out this equation in two variables can be reduced to an equation in just one variable. This leads to a better understanding of the relationship between  $F$  and  $G$  when the  $J(F, G) = F^n$ . This equation has been used by Abhyankar to show that a Jacobian pair has at most two weighted points at infinity when the weight is negative. Even though this statement should hold true for nonnegative weights, the same proof does not work because  $F$  and  $G$  have more freedom in  $J(F, G) = F^n$  when the weight is nonnegative. It is hoped that a better understanding of  $J(F, G) = F^n$  will give some insight into the Jacobian Conjecture. (Received September 12, 2008)