

1077-AA-1821 **Luis David Garcia-Puente*** (lgarcia@shsu.edu), Department of Mathematics and Statistics,
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Algebra has seen many applications in statistics, but it is only rather recently that algebraic geometry has been used to study statistical models and inference problems. This connection is based on the fact that most statistical models are defined either parametrically or implicitly via polynomial equations. The idea is summarized by the phrase "Statistical models are semialgebraic sets". In this introductory talk, I will present the basics of algebraic geometry and statistics needed to understand this phrase. I will further illustrate this point with several examples of classical statistical families and their corresponding algebraic descriptions. (Received September 21, 2011)