1056-60-135 **Mark A McKIbben*** (mmckibben@goucher.edu), Goucher College, Mathematics and Computer Science Department, 122 Hoffberger Science, Baltimore, MD 21204. *Abstract Measure-Dependent Stochastic Evolution Equations in a Hilbert Space with Applications to Nonlinear Diffusion.* Preliminary report.

A class of abstract stochastic evolution equations of Ito-type in a separable Hilbert space is investigated. The evolution equations under consideration are characterized by dependence of the nonlinearity on the probability distribution of the state process. Such equations are of so-called McKean-Vlasov type and arise naturally in the mathematical modeling of nonlinear diffusion processes.

A brief survey of past work on this type of equation will be provided, followed by a discussion of existence and stability theory for such a class of equations undergoing time-delays and impulsive effects. The abstract results will be illustrated by applications to concrete initial-boundary value problems of various kinds. Several open problems will also be mentioned. (Received July 30, 2009)