1052-35-281 **Emma Previato*** (ep@bu.edu), Department of Mathematics and Statistics, Boston University, Boston, MA 02215-2411. *The operator Schwarzian derivative.*

This talk brings together two lines of work. The first (with M.J. Dupré and J.F. Glazebrook) regards a characterization of the τ function for Sato's Grassmannian via the curvature of a universal bundle, after L.J. Mason, M.A. Singer, N.M.J. Woodhouse and M.I. Zelikin. The second (with S. Matsutani) regards geometric solutions of dispersionless hierarchies, e.g., dKP: $v_{xt} + (vv_x)_x + v_{yy} = 0$. The link explored is the following: the τ-function solution of KP is viewed as depending on sections of line bundles over a spectral curve, the τ-function of dKP depends on the moments of a uniformization of the curve. L.A. Takhtajan pointed out that solutions to integrable reductions of self-dual Yang-Mills can be modular functions, sections of a line bundle over moduli space, and advocated a relationship with the Grassmannian τ-function via the Krichever map. The idea would be to demonstrate this link via the operator Schwarzian derivative: dynamics on moduli spaces (Whitham's hierarchy) is related to dKP, as well as having a Schwarzian-derivative interpretation via accessory parameters, while the Grassmannian τ function can is the determinant of an operator cross-ratio and as such produces solutions to the Riccati equation via the Schwarzian derivative. (Received August 30, 2009)