1070-60-65   **Paul Bourgade*** (`bourgade@math.harvard.edu`), Science Center, One Oxford Street, Cambridge, MA 02138. *Extreme spacings for eigenvalues of random matrices.*

This is a joint work with Gerard Ben Arous about the extreme gaps between eigenvalues of random matrices. We give the joint limiting law of the smallest gaps for Haar-distributed unitary matrices and matrices from the Gaussian Unitary Ensemble. In particular, the smallest gaps, when rescaled by $n^{-4/3}$, are Poissonian with an explicit limiting density. Concerning the largest gaps, normalized by $\sqrt{\log n}/n$, they converge in L^p to a constant for all positive p. We compare these results with the extreme gaps between zeros of the Riemann zeta function (Received January 22, 2011)