# Statistics Seminar

Department of Mathematical Sciences

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| **DATE:** | Thursday, February 18, 2016 |
| **TIME:** | 1:15pm to 2:15pm |
| **LOCATION:** | WH 100E |
| **SPEAKER:** | Anton Schick, Binghamton University |
| **TITLE:** | Convergence rates of kernel density estimators in the $L_1$ norm |

**Abstract**

The usual approach to evaluate the performance of a kernel density estimator (KDE) is to look at the mean integrated square error. This provides rates of convergence in the $L_2$-norm. In this talk rates of convergence in the $L_1$-norm are presented. We consider both estimators of a density $f$ and its convolution $f*f$ with itself. In the former case the rates are nonparametric $n^{-s/(2s+1)}$ and depend on the smoothness $s$ of $f$. In the second case we obtain the parametric rate $n^{-1/2}$.