# The Oliver Club

www.math.cornell.edu/~oliver/

**Benjamin Seibold**, Temple University

## *Traffic Models, Phantom Jams, and Autonomous Vehicles*

*Initially homogeneous vehicular traffic flow can become inhomogeneous even in the absence of obstacles. We demonstrate how this "phantom jam" phenomenon can be described via traffic models: small perturbations grow into nonlinear traveling waves. These turn out to be analogs of detonation waves in reacting gas dynamics, thus creating a link between traffic flow, combustion, and water roll waves. An outlook is given on the fidelity of data-fitted traffic models, and how these models can provide strategies to control autonomous vehicles so that the fuel consumption of the overall traffic flow is reduced.*

## Thursday, November 20, 2014
## at 4:00 PM in 532 Malott Hall

Refreshments will be served at 3:30 PM in the Mathematics Department lounge (532 Malott Hall).