1086-35-1869 **David M. Ambrose*** (ambrose@math.drexel.edu), 3141 Chestnut St., Philadelphia, PA 19104.

Time-Periodic and Traveling Waves in Interfacial Fluid Dynamics.

We will discuss issues related to time-periodic and traveling waves for the vortex sheet with surface tension, and possibly for the water wave with surface tension. Results include computations of nontrivially time-periodic solutions for the full equations of motion for the vortex sheet with surface tension, and computations and proof of existence of traveling waves for the vortex sheet with surface tension (which are trivially time-periodic). Furthermore, numerical results for time-periodic solutions for a simple model system will be shown. If time permits, rigorous analysis for the simple model system will be discussed, as will traveling waves for the water wave with surface tension. This includes joint work with Jon Wilkening, Benjamin Akers, J. Douglas Wright, Mark Kondrla, Michael Valle, and possibly C. Eugene Wayne. (Received September 24, 2012)