Ill-Posedness of Some Water Wave Models
Jerry L. Bona, University of Illinois at Chicago
We discuss recent work revealing that certain naturally derived surface water wave models are not well posed in smooth function classes.

Initial-Boundary Value Problem for the BBM-Equation
Hongqiu Chen, University of Memphis
The so-called wave-maker problem for the BBM-equation is studied on the half-line. Improving on earlier results, global well-posedness is established for square-integrable initial data and boundary data that is only assumed to be locally bounded. Moreover, the method shows how the singular point propagates.

Local Discontinuous Galerkin Methods for the Korteweg-de Vries Equation
Ohannes Karakashian, University of Tennessee
The Local Discontinuous Galerkin (LDG) method for time dependent problems consists in treating numerically each spatial derivative as a separate variable by writing the equation in system form. We construct and analyze LDG discretizations for the Korteweg-de Vries equation. One difficulty faced by LDG methods is the need to generate approximations to the initial data, now a sequence of derivatives at t=0, which are optimal approximations and but must also satisfy certain compatibility conditions. We provide a general approach for the construction of optimal and compatible initial approximations.

Global Asymptotic Stability in a Model of Biological Networks
Hassan Fathallah-Shaykh, University of Alabama at Birmingham
Global asymptotic stability is of importance from a theoretical as well as an application point of view in several elds. We study a system of cubic polynomials that models biological networks. We show that the property that the interconnection matrix is Lyapunov diagonally stable is a key feature that determines convergence to a single equilibrium. We will give examples.