



The Mathematical Association of America

Math Club/MAA Student Chapter presents

The KdV Equation and the Great Wave of Translation, Liana Dawson (UCSB)

and

**Simulating Fish Interaction
Alethea Barbaro (UCSB)**

Wednesday, May 2, 2007

3 – 4 pm, Simpson Tower 213

Refreshments 2:30 - 3

We will split the hour between two speakers. Here are the abstracts:

The KdV Equation and the Great Wave of Translation: In this talk I will give an introduction to nonlinear dispersive equations. We will focus on the Korteweg de Vries (KdV) equation, which is a partial differential equation that models shallow water waves. I will discuss the history of the KdV equation and explore various characteristics of special solutions of the KdV equation called solitons or “great waves of translation.” If time permits I will mention the idea of well-posedness for an initial value problem and briefly discuss the focus of my research, unique continuation for fifth order dispersive equations.

Simulating Fish Interaction: In this talk, I discuss a model of fish behavior which I will be using to describe the annual migration of the Capelin around Iceland. I will describe the model which my research group is currently analyzing, how it evolved, and the relevant biology behind it. I will then talk about the associated system of ODEs and the solutions which we have found. I have movies which I made in MATLAB of many of the solutions, and I will be showing these. This talk is very accessible.

For more information, contact Mike “Quimby” Krebs at mkrebs@calstatela.edu or Tony Shaheen at ashahee@calstatela.edu.

Math Club website: http://www.calstatela.edu/academic/math/Math_Club/mathClub.htm