This 6-credit workshop is a block of two courses:

- **PHY 594: Pushing, Pulling, Floating and Flying: Understanding the Nature of Force**
- **EDU 671: Constructing Science Understanding in an Elementary Classroom**

**Monday-Friday, August 11-22, 2003, 8:00 AM – 5:00 PM** (lunch will be provided)

This workshop course will lead participants to deep understanding about topics many teachers teach, but find difficult to fully understand. The pedagogy used during the workshop represents a rethinking of the roles of teacher, students, and materials. The workshop participants are largely responsible for the introduction, development, and critical evaluation of ideas, models, and explanations in physics. They do this by interacting with each other in small groups, doing experiments, and making sense of observations in a structured setting. The leader takes the role of a guide and mentor, and the course materials provide substantial support and structure for student groups. Because this workshop course combines two 3-credit courses, participants must enroll in both courses.

**PHY 594 Course Description:**
This course is specifically designed for elementary and middle school teachers interested in gaining confidence in their understanding of the nature of force. This course will focus on a few major understandings, including: socially constructed definition of force, gravity, balancing forces, buoyancy and flying, density, and simple machines. Participants will complete activities and construct meaning through discussion, research and experimentation. Activities may include designing and experimenting with boats, flying machines, hot air balloons, and simple machines.

**EDU 671 Course Description**
This course explores current thinking about teaching science in elementary and middle school and examines how science ideas are constructed in informal and formal social settings. Exemplary science teaching methods will be demonstrated and evaluated. Research focusing on students’ formal and naive science understanding will be examined.

**What past participants say about this workshop:**

“Although I had adopted an inquiry approach in my own teaching, I had never had the opportunity to learn in this manner. This workshop gave me the total picture of learning as the learner experiences it.”

“By working through the process, I have discovered that physics is an understandable subject and that it is very important for me to create my own mental models.”

“This workshop gave me the experiences to empathize with the frustrations and celebrate the successes of the young learner.”

“The activities from this workshop let me develop understanding that I will remember in the future because I tried it, and wasn’t just told it.”

To register for this workshop course, send this completed form to:
Dr. Dewayne Beery, Sci. Building 262, Buffalo State College,
1300 Elmwood Ave, Buffalo NY 14222.
Or apply on-line at http://PhysicsEd.BuffaloState.edu/programs/

Name_________________________ e-mail_________________________
Home Phone_____________________
Home Address___________________ City________________State____Zip____
School_________________________ (Urban) (Suburban) (Rural) (Public) (Private)
School Address___________________ City________________State____Zip____