Application of The CPU Project Simulations in Science Instruction

David Kumar, Florida Atlantic University, USA; Mary Baker, The School Board of Broward County, Florida, USA; Karen Tobias, Deerfield Beach High School, USA

The CPU Project (*Constructing Physics Understanding in a Computer-Supported Learning Environment*) builds on previous work incorporating computer technology to build a constructivist-oriented, guided inquiry learning environment. The CPU Project, funded by the National Science Foundation grant ESI-9454341, meets the goals of:

- Encouraging elementary teachers to teach physical sciences
- Improving understanding of physics in high school physics classes
- Integrating technology in science education

There are seven content units, each divided into cycles to construct a relevant model: Motion and Force, Waves and Sound, Static Electricity and Magnetism, Current Electricity, Light and Color, Underpinnings, and Nature of Matter. The CPU pedagogy of guided inquiry encourages a rethinking of the roles of teacher, students, and materials and is based on cycles of:

- **Elicitation** of students' ideas
- Guided **development** in which students modify or discard their old ideas and/or develop new ones in a movement towards target ideas
- **Application** of target ideas to new situations