

## **FLORIDA BOARD OF EDUCATION**

January 17-18, 2002

**SUBJECT:** Implementation Authorization for a Ph.D. in Modeling and Simulation at the University of Central Florida

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### **PROPOSED BOARD ACTION**

Approve implementation authorization for a Ph.D. in Modeling and Simulation (CIP 30.0601) at the University of Central Florida.

### **BACKGROUND INFORMATION**

Modeling and Simulation is an emerging discipline that utilizes a multidisciplinary approach to analyze and solve complex problems by combining data and models from the natural, social, technological, behavioral, and life sciences. UCF is uniquely positioned to offer this program because of its location in an area considered to be a world center for modeling and simulation activity, and because it already has a number of programs and research facilities directly related to modeling and simulation, including the nationally prominent Institute for Simulation and Training. There is strong support for the program from related Florida-based industry, and the program is expected to create new opportunities for collaborative research between UCF and local industry. Currently about 25,000 high paying jobs exist in Central Florida associated with modeling and simulation, and this is expected to increase with the addition of the Ph.D.

The 72 credit hour program is interdisciplinary in nature, combining courses from several existing programs at UCF. It will offer the following focus areas: Quantitative Aspects of Simulation, Simulation Infrastructure, Simulation Management, Computer Visualization in Modeling and Simulation, Simulation Modeling and Analysis, Interactive Simulation/Intelligent Systems, and Human Systems in Modeling and Simulation. This is expected to be a low cost State investment to start and maintain, especially for a Ph.D., primarily because it is refocusing existing resources, and because a large portion of the necessary funding will come from external contracts and grants.

The UCF Board of Trustees approved implementation of a Master of Science in Modeling and Simulation, and approved the proposal for the Ph.D. at its September 26, 2001 meeting. A consultant, Dr. R. Bowen Loftin, Professor of Electrical and Computer Engineering, and Director of Simulation Programs at Old Dominion University, conducted a site visit to UCF in October and recommends approval of this program. If approved, the University plans to implement the program in May 2002.

**UCF Ph.D. in Modeling and Simulation  
Summary Information**

**Estimated Costs:**

|        | Total     | % & \$ Current  | % & \$ New      | % & \$ C&G       | Cost per FTE |
|--------|-----------|-----------------|-----------------|------------------|--------------|
| Year 1 | \$169,104 | 23%<br>\$38,155 | 10%<br>\$17,949 | 67%<br>\$113,000 | \$12,665     |
| Year 5 | \$406,894 | 16%<br>\$64,903 | 3%<br>\$12,991  | 81%<br>\$329,000 | \$7,024      |

**Projected FTE and headcount are:**

|                    | Projected Headcount | Student FTE |
|--------------------|---------------------|-------------|
| <b>First Year</b>  | 9                   | 4.43        |
| <b>Second Year</b> | 14                  | 7.04        |
| <b>Third Year</b>  | 19                  | 9.43        |
| <b>Fourth Year</b> | 24                  | 9.85        |
| <b>Fifth Year</b>  | 25                  | 11.09       |

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**Supporting Documentation Included:**

Summary information.

**Facilitators / Presenters:**

Carl Blackwell / R. E. LeMon