In this workshop for faculty teaching undergraduates in all academic disciplines, the participants will be invited to:

1. **examine** the observable differences in reasoning patterns used by college students,
2. **compare** these patterns to a coherent scheme and theory of development.
3. **explore** ways of engaging students to help them make the transition from naive reasoning patterns to more mature reasoning.

The seminar will feature small group interactions led by Robert G. Fuller, Univ. of Nebraska Lincoln, Dewey I. Dykstra, Jr., Boise State Univ. and Scott M. Stevens, Carnegie Mellon Univ.


Participation is limited to the first 36 faculty who sign up. Participants are expected to have students in one or more of their classes complete a reasoning puzzle prior to the session, and to bring the student responses to the workshop.

The workshop will be held on campus. Detailed information will be provided to those who sign up. Contact Denise Slaughter (dslaughter@udc.edu or 274-5072 to register).

A reception and autograph opportunity will follow the workshop.

**About the Workshop Leaders**

Robert G. Fuller, Professor Emeritus, Department of Physics and Astronomy, University of Nebraska – Lincoln (UNL). Dr. Fuller began collaboration with Dr. Robert Karplus, University of California, Berkeley, in 1973 to produce the *Physics Teaching and Development of Reasoning* Workshop for the American Association of Physics Teachers (AAPT) in 1975. Dr. Fuller directed the Piagetian-based, multidisciplinary
program for college freshmen, the ADAPT program, at UNL from 1975-97. In 1992, he received the Robert A. Millikan prize, from the AAPT, for his outstanding contributions to physics education. Professor Fuller also received three outstanding teaching awards from the University of Nebraska, an outstanding faculty salute from the American Association of Higher Education in 1986 and was designated by *Insight* magazine, "one of 10 best college professors in America", March 11, 1987. He is the author of numerous professional publications. He edited a book of Robert Karplus's articles published under the title of *A Love of Discovery, Science Education The Second Career of Robert Karplus* by Kluwer Academic/Plenum Publishers in 2002.

**Dewey I. Dykstra, Jr.**, Professor, Physics Department, Boise State University. Dr. Dykstra's career is indelibly marked by early exposure to ideas from the Swiss genetic epistemologist, Jean Piaget, through a *College Science Teaching and the Development of Reasoning* Workshop developed by Robert Fuller and colleagues in the ADAPT Program at UNL. His research has been to better understand the nature of understanding of physical phenomena. How does one identify such understanding? How, why and under what circumstances does it change? This research has been mutually synergistic with the development of instructional materials and practices. His theoretical grounding for this work is Piaget's theory of cognitive equilibration and radical constructivism. His research and participation in AAPT led to work on the development team for the Powerful Ideas in Physical Science–A Model Course Project for which he developed three of the six units. He holds the Distinguished Service Citation from AAPT.

**Scott M. Stevens.** Research Professor, Entertainment Technology Center, Carnegie Mellon University. Dr. Stevens has been involved with pioneering multimedia research and development for thirty years, beginning in 1976 when he developed interactive video applications for an experimental system delivering compressed video to the home. As a faculty member at UNL in the early 1980's, he performed interface design research on the world's first educational, interactive videodisc system. In the late 80's and early 90's, Dr. Stevens and his research team created the concept of intelligent multimedia as they developed the world's first digital video CD-ROM. Dr. Stevens' recent research involves creating virtual pedagogical agents to aid physics teachers and the application of automated video understanding to aid in late-life quality of life. In 1994 Dr. Stevens was the founder of the IEEE Computer Society International Conference on Multimedia Computing and Systems and Chair of its 1996 Conference in Hiroshima Japan. In 1999 he was the Chair for two international multimedia conferences: IFIP Semantic Issues in Multimedia Systems in New Zealand and ACM Multimedia in Orlando, FL. He has written over sixty professional papers on multimedia.