

Transforming the Culture: Undergraduate Education and the Multiple Functions of the Research University

Day One: Thursday, November 9, 2006

Welcoming Remarks and Introduction

Wendy Katkin, Director, The Reinvention Center

Plenary Session: The Multiple Functions of the Research University: Where Does Undergraduate Education Fit In?

This opening talk will examine the relationship between undergraduate education and research universities' other core functions and the value in forming creative alliances among functions in order to enhance undergraduate education.

Speaker: James Moeser, Chancellor and Professor of Music, University of North Carolina at Chapel Hill

Plenary Session: A Case Study: Creating a Culture of Collaboration at the University of California, Berkeley

This session will focus on UC Berkeley's Mellon Fellowship for Undergraduate Research, a four-year, grant-supported initiative aimed at encouraging and facilitating faculty collaboration with other campus academic partners to strengthen the connections between undergraduate research, information literacy, and library collections, particularly in large enrollment and other large impact courses. Partners include the Library, Division of Undergraduate Education, Graduate Division, Undergraduate Division in the College of Letters and Sciences, Center for the Study and Teaching of American Cultures, Office of Educational Development, Graduate Student Instructors, Teaching and Resource Center, and Educational Technology Services.

Panelists: Elizabeth Dupuis, Associate University Librarian for Educational Initiatives and Director, Doe/Moffitt Libraries

Victoria Robinson, Lecturer, Ethnic Studies & American Cultures Coordinator, 2003-04 Mellon Fellow, and Mellon Steering Committee Member

Cynthia Schragger, Special Assistant to the Vice Provost for Undergraduate Education and Mellon Steering Committee Member

Breakout Sessions: Integrating Core Functions

Aligning the goals and interests of undergraduate education with research universities' other functions and priorities can be difficult, particularly when the priorities are seen as conflicting or competing. In these parallel sessions, conference participants will examine challenges university faculty and administrators face in connecting undergraduate education with other university functions, and they will recommend strategies both for addressing the challenges and for establishing productive partnerships.

- *The Reciprocal Relationships among Research, Teaching, and Learning*
Leader: Robert Full, Chancellor and Goldman Professor of Integrative Biology and Director of the PolyPEDAL Laboratory and of the Center for Biological Inspiration in Education and Research (CIBER), University of California, Berkeley
- *Stretching the University's boundaries: The local community as a resource and site for*

teaching and learning

Leader: Rhonda Y. Williams, Associate Professor of History, Case Western Reserve University

- *Embedding public service and research in academic programs*

Leader: Carol Muller, Associate Professor of Music, University of Pennsylvania

- *Creative models for integrating graduate and undergraduate education in the sciences, math, and engineering*

Leader: Ellen Fanning, Stevenson Professor of Molecular Biology, and Katherine Friedman, Assistant Professor of Biological Sciences, Vanderbilt University

- *Humanities postdoctoral teaching fellowships in undergraduate education*

Leader: Ellen Woods, Associate Director of the Introduction to the Humanities Program and Associate Vice Provost for Undergraduate Education, Stanford University

- *Library as learning space and place*

Leader: Lisa Janicke Hinchliffe, Associate Professor of Library Administration, Head of the Undergraduate Library, and Library-wide Coordinator for Information Literacy Services and Instruction, University of Illinois at Urbana-Champaign

- *Living as learning: Integrating academic and residential experiences*

Leaders: Stephen L. Esquith, Professor of Philosophy and acting Dean of the Residential College in the Arts and Humanities, and June Youatt, Professor of Family and Child Ecology, Associate Provost for Undergraduate Education and Dean of Undergraduate Studies, Michigan State University

- *Undergraduate Research Centers: A Model for Incorporating Research into the Mainstream Science Curriculum*

Leader: Gabriela Weaver, Associate Professor of Chemistry, and Director, Center for Authentic Science Practice in Education, Purdue University

- *Building undergraduate research partnerships: Engaging education, government, and industry*

Leaders: George T. Barthalmus, Director, Office of Undergraduate Research, and Interim Head, Department of Zoology, North Carolina State University, and Jennifer Klimas, Research Director, Office for Research & Sponsored Programs, University of North Carolina-Office of the President

Lunch/Visit the Marketplace

Plenary Session: Translating principles of learning into educational applications

Research universities have been at the forefront in establishing the new “science of learning” which has the potential to change, and even transform, the way teachers teach and students learn. This session will provide an overview of recent advances in research on learning, consider how effective application of relevant principles can improve faculty teaching and student learning, and examine challenges of application within the research university context.

"How We Learn versus How We Think We Learn"

Speaker: Robert A. Bjork, Distinguished Professor of Cognitive Psychology and Chair, Department of Psychology, University of California, Los Angeles

"Principles of Cognitive Science in Educational Practice"

Speaker: Janet Metcalfe, Professor of Psychology and of Neurobiology and Behavior, Columbia University

Moderator: William J. Gehring, Arthur F. Thurnau Professor of Psychology, University of Michigan

Breakout Sessions: Applying Principles of Learning and Technology in Diverse Educational Settings

These sessions will investigate ways in which research universities can apply basic research on learning and technological innovation to the undergraduate mission. If used appropriately, for example, both of these advances can provide a foundation for curricular development and for the adoption of pedagogical strategies that promise to enhance undergraduates' ability to consume, produce, and apply knowledge. These advances can also be adapted to different educational constructs, disciplinary learning styles, and the needs of diverse populations.

A. At the Institutional Level

These sessions will consider ways in which principles of learning and new technologies can transform instruction in contexts that cut across departments and fields.

- In high enrollment courses
Leader: William J. Gehring, Arthur F. Thurnau Professor of Psychology, University of Michigan*
- In designing and teaching an inquiry-based course/curriculum
Leader: Christopher Impey, University Distinguished Professor and Interim Head, Department of Astronomy, and Astronomer at Steward Observatory, University of Arizona*
- Internationalizing the undergraduate experience: Moving beyond course work and study abroad
Leader: Sharon V. Salinger, Professor of History and Dean, Division of Undergraduate Education, University of California, Irvine*
- Teaching teachers: Incorporating research on learning into professional development activities
Leader: Gregory Light, Associate Professor of Education and Director, Searle Center for Teaching Excellence, Northwestern University*
- Approaching teaching as we*

B. Within Fields and Majors

These sessions will examine approaches to integrating research within different fields and majors.

- Applying research and technology in teaching science to majors and non-majors
Leader: Ron Hoy, David and Dorothy Merksamer Professor in Biology, Cornell University*
- In writing and writing-intensive courses
Leader: Joseph Harris, Director, University Writing Program, and Cary A. Moskovitz, Director, Writing in the Disciplines, Duke University*
- In the humanities and humanistic social sciences: Creating new modes of scholarly activity
Leader: Massimo Riva, Professor of Italian Studies, Brown University*

*approach research:
Establishing goals,
collecting the evidence, and
measuring achievement
Leader: Robert W. Brown,
Institute Professor of
Physics, Case Western
Reserve University*

- *Curricular responses to
diversity
Leader: Isabel Nazario,
Associate Vice President for
Academic and Public
Partnerships in the Arts and
Humanities, Rutgers, The
State University of New
Jersey,*
- *Technologies to enable and
evaluate collaborative
projects in undergraduate
education
Leader: Kent L. Norman,
Associate Professor of
Psychology, University of
Maryland*

Day Two: Friday, November 10, 2006

Introduction: Summary of First-Day Activities and Introduction to the Second Day

Wendy Katkin, Director, The Reinvention Center

Plenary Session: Supporting Integrative Models

The creative integration of functions promises not only to enhance aspects of undergraduate education, but it allows also for innovative responses to some of the most persistent challenges universities, and society more generally, face. This session will focus on ways funding agencies and universities can work together to establish common goals and initiate program that increase both of their capacities to address them.

"Nurturing the Teacher-Scholar: the HHMI Professor Program"

Speaker: Thomas Cech, President, Howard Hughes Medical Institute

"Making Undergraduate Education an Integral Part of the Global Research University"

Speaker: Wayne Clough, President, Georgia Institute of Technology

Breakout Sessions: Preparing an Educated Citizenry: Integrative Models of Undergraduate Education

Successful integration of their multiple functions can enrich and give new meaning to the undergraduate education research universities offer, particularly as universities endeavor to respond to the major forces that are re-shaping the world. These sessions will examine

institutional, disciplinary, and cross-disciplinary models that exploit assets derived from the university's various functions to respond to the intellectual and cultural paradigm shifts that define the current era. One session will address the costs of educational innovations and new opportunities for funding resulting from creative partnerships.

A. At Institutional Level

- *Incorporating new knowledge into the undergraduate experience
Leaders: David Helfand, Professor and Chair of the Department of Astronomy and Co- Director, Columbia Astrophysics Laboratory, and Darcy Kelley, Professor of Biological Sciences, Columbia University*
- *Developing global citizens: A comprehensive approach
Leader: Veronica Makowsky, Professor of English and Vice Provost for Undergraduate Education, University of Connecticut*
- *Addressing the changing demography in the United States through education
Leaders: Robert Hummer, Professor of Sociology, and Pauline Turner Strong, Associate Professor of Anthropology, Folklore and Public Culture, and of Women's & Gender Studies, University of Texas at Austin*
- *Entrepreneurship as liberal education
Leader: William Scott Green, Professor of Religious Studies, Senior Vice Provost, and Dean of Undergraduate Education, University of Miami*
- *Expanding opportunities for funding through new synergies
Leaders: Gail Giebink, Director of Foundation Relations, University of Texas at Austin and Lucia Albino Gilbert, Professor and Provost, Santa Clara University*

B. Within and Across Disciplines

- *In the natural sciences and engineering: Science education in the US: Training the next generation
Leader: Tim Stearns, Associate Professor of Biological Sciences and Genetics, Stanford University*
- *Within the humanities and humanistic social sciences
Leader: Patricia A. Turner, Professor of African-American Studies and American Studies and Interim Dean of Humanities, Arts & Cultural Studies, University of California-Davis*
- *Within the arts: New media, new strategies
Leader: Christa Erickson, Associate Professor of Art, Stony Brook University*
- *In fields of study that cross intellectual domain: Multimedia in the core
Leader: Holly Willis, Research Assistant Professor, School of Cinema-Television, and Associate Director for the Multimedia in the Core Program, Institute for Multimedia Literacy, University of Southern California*
- *Designing Matter: Fusing Science and Humanities Approaches to Address Real World Challenges
Leaders: Cassandra Fraser, Professor of Chemistry, Jennifer Aultman, Doctoral Student, Department of Anthropology, and Raymond Malewitz, Doctoral Student, Department of English,*

Plenary Session: New Research Opportunities Through Technology

Speakers: Edward L. Ayers, Hugh P. Kelley Professor of History and Dean of Arts and Sciences; Scott Nesbit, Doctoral Student, Department of History; and Murre Martindale, Undergraduate Student in Politics, the University of Virginia

Plenary Session: Future Directions

This concluding session will consist of a panel discussion in which members from the natural and social sciences and the humanities will offer their perspectives on the themes and interests that will dominate these fields in the next three-to-five years. The panel will be followed by an interactive discussion with conference participants.

*Panelists: Edward L. Ayers
William Scott Green
David J. Helfand*

Moderator: Rosemary Haggett, Deputy Assistant Director (Acting), Education and Human Resources Directorate, National Science Foundation

Closing Remarks