



A Conference On

Undergraduate Research and Scholarship and the Mission of the Research University

The Inn and Conference Center
College Park, Maryland
November 14-15, 2002

Co-Sponsors:

Association of American Universities

The National Science Foundation

Sigma Xi: The Scientific Research Society

The Woodrow Wilson National Fellowship Foundation



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**The
Reinvention
Center**
AT STONY BROOK

Dear Conference Participants:

It is a genuine pleasure to welcome you to The Reinvention Center's inaugural conference on "Undergraduate Research and the Mission of the Research University." The Reinvention Center at Stony Brook was established two years ago as an outgrowth of the Boyer Commission report *Reinventing Undergraduate Education: A Blueprint for America's Research Universities* (1998). The report offered a vision of undergraduate education at these institutions that builds on their unique assets and scope. The Reinvention Center's charge is to sustain the report's emphasis on undergraduate education at research universities and also to be a catalyst for change.

This is the first major national conference to deal exclusively with undergraduate research and scholarship within the unique context of research universities. The driving goal is to help research universities re-conceive their undergraduate education in ways that bring research, scholarship, and creative endeavor to the forefront and impact large numbers of students. This interest emerged as a priority at a series of Center-sponsored regional network meetings (attended by more than 200 faculty and administrators from 85 public and private research universities) and through a survey of faculty and administrators at 93 research universities. The conference program, including identification of the distinguished individuals who are serving as speakers, panelists, and breakout session leaders, reflects the considerable input of those who have participated in the regional network meetings. I thank you all.

I am indebted to the Association of American Universities, the National Science Foundation, Sigma Xi, and The Woodrow Wilson National Fellowship Foundation who are co-sponsors and who have contributed financial support and other resources to the conference.

I also wish to express special appreciation to the members of the Reinvention Center Advisory Committee for their support and for their significant efforts in shaping the conference.

Finally, particular gratitude goes to Debra Palmese, who has been the primary conference coordinator; Mary Leming, who has assisted on programmatic matters; and Diane Harvey, Lisa Kiely, Susan Komives, and Beth Pennington from the University of Maryland, who voluntarily stepped forward to provide on-site assistance in a myriad of ways.

This conference has been conceived as a working conference. By that we mean we have designed it so that participants will emerge from this two-day event not only with a sense of excitement and new ideas, but also with a plan for specific actions to be carried out on their own campuses within the next two years. Information on the Action Plan is provided in your conference packet. We will follow up on this meeting by posting your Action Plans on the Conference Web site, by inviting six-month progress reports, which will also be posted, by expanding Center listservs so that colleagues working on similar plans can communicate, and by organizing network meetings around the most common and perplexing issues. Conference proceedings also will be published in printed form.

I am looking forward to meeting you all and joining you in two days of stimulating discussion and action.

Sincerely,



Wendy Katkin
Director, The Reinvention Center at Stony Brook

General Conference Information

Registration

Conference registrants need to check in at the Conference Information Desk, located in the main concourse area of the Inn and Conference Center, during the times listed below.

Wednesday, November 13
7:00 p.m.-9:00 p.m.

Thursday, November 14
7:30 a.m.-2:30 p.m., 4:00 p.m.-5:00 p.m.

Friday, November 15
7:30 a.m.-9:30 a.m.

Conference Meals

Your conference registration fee includes breakfast and lunch on Thursday and Friday, November 14 and 15. If you have made special dietary requests, you should inform the server of your needs at the time you are seated for the plated meals. If you have special dietary needs that you did not identify during registration, please stop by the Conference Information Desk to inform conference staff.

You are on your own for dinner. A list of nearby restaurants is available at the Conference Information Desk. If you prefer to go to Washington, D.C. for dinner, you can get there easily by metro or taxi. The trip by metro takes about 30 minutes. A taxi from College Park to downtown D.C. costs approximately \$15.

Transportation

Sign-up sheets are available at the Conference Information Desk for conference participants who want to share a ride into D.C. on Thursday evening or to BWI, National, or Dulles Airports on Thursday and Friday. We ask that you contact prospective "car sharers" directly to make arrangements. The concierge at the front desk at the Conference Center can assist you in getting a car or taxi.

Messages

You may leave messages for colleagues attending the conference in the Message Box at the Conference Information Desk.

Breaks

Beverages and snacks will be provided each day during breaks. Please consult the program schedule for locations.

Name Tags

Conference registrants are asked to wear their name tag at all times, both as a courtesy to other attendees and as an indication to the conference staff that you are a participating member of this conference.

Smoking/Fire Regulations

Smoking is not permitted in any of the meeting rooms, at meals, or in enclosed areas. Fire and safety regulations preclude bringing additional chairs into meeting rooms.

Conference Evaluation

You will find a conference evaluation form in your conference packet. Please fill it out and deposit it in the marked "Evaluation Box" located in the back of the Fort McHenry Room, where the final session each day takes place. If you leave before the final session, please drop the form in the "Evaluation Box" at the Conference Information Desk. You may also submit the form online through our Web site at www.stonybrook.edu/reinventioncenter.

E-mail/Copy/FAX

The Inn and Conference Center has a full-service Business Center located on the main concourse. Conference participants can access e-mail accounts there. There is a 34 cents per minute charge for a minimum of 15 minutes. Black and white copies of print materials can be obtained for 15 cents per page.

Marketplace of Ideas

Visit the Marketplace, located on the 2nd Floor, to obtain information and see examples of colleagues' creative ideas and successful projects. The Marketplace will feature displays of special programs and innovations relating to undergraduate research, scholarship, and creative activity.

Conference Schedule: Day One, November 14

Infusing the Research Mission Into Undergraduate Education

8:30-9:30

Introduction

Fort McHenry Room

Research universities need to make a concerted effort to evaluate, articulate, communicate, and promote widely the unique benefits or “value-added” undergraduates derive from an educational model that has research, scholarship, and creative activity at its core.

Welcoming Remarks

Wendy Katkin, Director, The Reinvention Center

Presentations:

Making the Rhetoric a Reality

Shirley Strum Kenny, President, Stony Brook University and Chair, Boyer Commission on Educating Undergraduates in the Research University

Education Through Guided Inquiry: Can We Begin with the Freshman Year?

Bruce Alberts, President, National Academy of Sciences

9:45-11:15

Breakout Session 1: Challenges in Implementing Undergraduate Research and Scholarship

The challenges to implementing undergraduate research are partly institutional in character, but also vary by discipline. The conference has time periods for parallel breakout sessions that will explore Institutional and Disciplinary Challenges. During these periods, participants will be able to choose a session that speaks directly to their interests. There will be some overlap across sessions in institutional topics.

Each breakout group will be asked to produce one or two recommendations or strategies that the Center and individual institutions can use to build a framework of “next steps” in enhancing the role of undergraduate research, scholarship, and creative activities.

A. Institutional Challenges

Across the disciplinary spectrum, developing the infrastructure to support an undergraduate education linked to research and scholarly activity represents a major institutional challenge. A related challenge is developing a definition of “undergraduate research” that encompasses a range of activities and acknowledges the need for different goals and outcomes for students at different levels and across all fields. These sessions will address the ways in which resources specific to the research university can shape undergraduate research.

- **Scaling Up and Sustaining Successful Approaches**
Room 0101
Leader: *Susan G. Forman*
- **A Comprehensive Approach:
Creating a Continuum of Academic Experiences**
Room 2101
Leader: *Ellen Woods*
- **Incorporating Disciplinary Norms and Practices into
Administrative Strategies**
Room 2129
Leaders: *Edie N. Goldenberg* and *Daniel Holliman*
- **Incorporating Graduate Student Participation**
Room 2117
Leaders: *Patricia J. Pukkila*, *Reed Wilson*, and *David Martinez*

B. Disciplinary Challenges

Undergraduate research and scholarly activity create a variety of demands on human, physical, and financial resources. These sessions will address, within broad discipline context, such considerations as: goals; disciplinary requirements; resources needed; using currently untapped resources (library, research personnel, post-docs, grad students); incentives for student and faculty participation; blending curricular and extracurricular approaches; and use of information technology.

- **Earth and Space Sciences**
Room 2119
Leader: *Martin Schoonen*
- **Engineering**
Room 1109
Leader: *J. Kim Vandiver*
- **Humanities/Humanistic Social Science**
Room 0109
Leaders: *Barbara Nolan* and *Janice DeCosmo*
- **Life Sciences**
Room 1115
Leader: *William Wood*
- **Management and Applied Social Sciences**
Room 2109
Leaders: *Gary Hochberg* and *Andrea Hershatter*

Infusing the Research Mission Into Undergraduate Education

11:15-11:30

Break

First and Second Floor and Lower Level Concourses

11:30-12:45

Roundtable: Connecting Departmental Interests and Actions with Institutional Goals

Fort McHenry Room

Departmental “buy-in” is essential to efforts at reform. Departments in research universities have great autonomy as they define curriculum, implement standards, design courses, assign instructors, reward faculty, provide incentives, mediate between faculty and the administration, and encourage student interest. Faculty, chairs, deans, and provosts will examine the ways in which departments can build on their inherent strengths to bring research and creative endeavor to the forefront of the undergraduate curriculum.

Moderator: *William S. Green*, Professor of Religion, Philip S. Bernstein Professor of Judaic Studies and Dean of the College, University of Rochester

Panelists: *John Guillory*, Professor and Chair, Department of English, New York University

Robert L. Hampton, Professor of Sociology, Associate Provost for Academic Affairs and Dean for Undergraduate Studies, The University of Maryland at College Park

Clinton T. Rubin, Professor and Chair, Department of Biomedical Engineering and Director, Center for Biotechnology, Stony Brook University

Judith L. Smith, Professor of Physiological Science and Vice Provost for Undergraduate Education, College of Letters and Science, University of California at Los Angeles

12:45-2:00

Lunch

Chesapeake Room

Presentation:

Undergraduate Research in Research Universities: An AAU Initiative

Speakers: *Nils Hasselmo*, President, Association of American Universities

Carolyn Merkel, Director, Student-Faculty Programs, California Institute of Technology

2:00-3:30

Breakout Session 2: Challenges in Implementing Undergraduate Research and Scholarship

(See the description for Breakout Session 1.)

A. Institutional Challenges

- **Scaling Up and Sustaining Successful Approaches**
Room 0101
Leader: *Susan G. Forman*
- **Requiring Research Competence in the
Undergraduate Curriculum**
Room 2101
Leaders: *Robert Thompson* and *Lee Willard*
- **Incorporating Graduate Student Participation**
Room 2117
Leaders: *Patricia J. Pukkila*, *Reed Wilson*, and *David Martinez*
- **Involving All of the Students Some of the Time vs.
Involving Some of the Students All of the Time**
Room 0109
Leaders: *Bruno Giordani* and *Sandra R. Gregerman*

B. Disciplinary Challenges

- **Experimental/Data-Intensive Social Sciences**
Room 1115
Leader: *Ludy T. Benjamin, Jr.*
- **Fine/Performing Arts**
Room 2129
Leader: *Julian M. Olf*
- **Mathematics/Computer/Computational Sciences**
Room 1109
Leader: *Thomas F. Banchoff*
- **Physical Sciences**
Room 2109
Leaders: *Jeanne E. Pemberton* and *Glenn Starkman*
- **Contributing to the Undergraduate Research Mission:
The Library as Laboratory**
Room 2119
Leaders: *Diane Harvey* and *Patricia Iannuzzi*

Infusing the Research Mission Into Undergraduate Education

3:30-3:45

Break

First and Second Floor and Lower Level Concourses

3:45-5:15

Roundtable: Agents Critical to Change

Fort McHenry Room

Many agents both within and external to the university affect the way research universities define and carry out their missions. Funding agencies play critical roles. This session will bring together individuals from public and private funding organizations and professional societies to examine the ways in which their priorities can inform and be informed by the integration of research and scholarship into the undergraduate mission.

Moderator: *Matthew Santirocco*, Professor of Classics, Angelo J. Ranieri Director of Ancient Studies and Dean of the College of Arts and Science, New York University

Panelists: *Joseph Bordogna*, Deputy Director, The National Science Foundation

Peter J. Bruns, Vice President, Grants and Special Programs, Howard Hughes Medical Institute

Stanley N. Katz, Professor, The Woodrow Wilson School and Director, Center for Arts and Cultural Policy Studies, Princeton University, and President Emeritus, American Council of Learned Societies

Joan Krejci Griggs, Program Officer and Coordinator, FIPSE Comprehensive Program, U.S. Department of Education

5:15

Reception

(Cash Bar)

Chesapeake Room

Conference Schedule: Day Two, November 15

The Distinctive Value Added by an Undergraduate Education Linked to the Research Mission

8:30-9:00

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

Fort McHenry Room

Wendy Katkin, Director, The Reinvention Center

Presentation: The Value of Assessment

David P. Roselle, President, University of Delaware

9:00-10:30

Assessment Case Study: The University of Delaware

Fort McHenry Room

In 1996, the University of Delaware was granted an NSF Recognition Award for the Integration of Research and Education (RAIRE) to conduct an extensive, multifaceted evaluation of its undergraduate research program. In this session, panelists who advised and/or carried out the study will describe the process of designing and implementing it, report on its outcomes, and explain how the study's different facets can be adapted to the needs and interests of other universities that wish to assess undergraduate research at their own institutions.

Moderator: *Conrado M. Gempesaw, Jr.*, Professor of Food and Resource Economics and Vice Provost for Academic Programs, University of Delaware

Panelists: *Karen Bauer*, Assistant Professor of Psychology and Women's Studies and Assistant Director, Institutional Research and Planning, University of Delaware

Joan Bennett, Professor of English and Coordinator, Undergraduate Research Program, University of Delaware

Andrew Zydny, Endowed Bio-Chair and Professor of Chemical Engineering, Pennsylvania State University

10:30-10:45

Break

First and Second Floor Concourses

10:45-12:00

Roundtable: Related Assessment Efforts

Fort McHenry Room

This session will consider other major efforts to assess student and faculty participation in undergraduate research in specific contexts, as well as in terms of students' overall undergraduate experience. The discussion will examine a variety of approaches and tools that take into account such factors as the diversity of the research university student population, individual institutional and program contexts and goals, and factors that influence students' intellectual growth.

Moderator: *Gregory Henschel*, Senior Policy Analyst, Office of Educational Research and Improvement, U.S. Department of Education

Panelists: *Marcia Baxter-Magolda*, Professor of Educational Leadership, Miami University of Ohio

Michael P. Doyle, Professor of Chemistry, University of Arizona

William E. Kelly, Professor of Civil Engineering, Catholic University of America, and Chair, Engineering Accreditation Commission, Accreditation Board for Engineering and Technology (ABET)

12:00-1:15

Lunch

Chesapeake Room

Presentation: The Engaged University: Integrating Research, Education, and Community Service

Judith A. Ramaley, Assistant Director, Education and Human Resources, The National Science Foundation

The Distinctive Value Added by an Undergraduate Education Linked to the Research Mission

1:15-3:15

Breakout Session 3: Assessment and Future Directions

Participants have a choice of three concurrent breakout sessions: on assessment, on topics following up on the first day's sessions, or on proposed disciplinary and resource networks.

A. Assessment

These working sessions on assessment will focus on different phases of the assessment process and the different types of tools that are appropriate. Participants can sketch potential assessment plans for programs or projects at their own institutions. One session will consider the role of assessment in integrating curriculum with desired student outcomes.

- **Formative Assessment:** (no comparison groups) letters of intent, student and faculty end-of-term evaluations, faculty survey, visiting expert, content analysis
Room 2109
Leaders: *Joan Bennett* and *Said Shokair*
- **Summative Assessment—Alumni Study** (using matched comparison groups)
Room 2117
Leader: *Andrew Zydney*
- **Getting Started—Determining Appropriate Assessment Goals, Tools, and Methods** (what questions to ask, populations to target, qualitative vs. quantitative methods, tools available)
Room 2101
Leader: *Karen Bauer*
- **Other Approaches: Applying the ABET Model to Other Disciplines**
Room 2119
Leader: *William E. Kelly*

B. Future Directions

Based on outcomes of the first day's breakout sessions, conference leadership will identify a small number of areas for further discussion.

- **Topics derived from first day breakout sessions' reports: TBA**
Room 2129
Leader: *Wendy Katkin*

C. Disciplinary and Resource Networks

The Reinvention Center plans to form Disciplinary and Resource Networks—communities of practitioners addressing mutual interests, serving as information resources, and seeding further change by sharing practices and strategies.

Room 1109
Leader: *Judith Sunley*

- **Psychology**
Leaders: *Bernadette Gray-Little*, *Alan Kraut*, and *Merry Bullock*
- **Literary Studies** (English, Comparative Literature, Foreign Literature, Literary Studies within other disciplines)
Leader: *Don Bialostosky*
- **Research Librarians**
Leaders: *Diane Harvey* and *Patricia Iannuzzi*
- **Teaching Resource Center Directors**
Leader: *Sharon Prado*

Similar meetings of assessment personnel and undergraduate research program directors will take place from 3:30-4:45.

The Distinctive Value Added by an Undergraduate Education Linked to the Research Mission

3:15-3:30

Break

First and Second Floor Concourses

3:30-4:45

Action Planning Session

Fort McHenry Room

The goal is to help shape the agenda of institutions, departments, funding organizations, and professional societies as all work toward an environment where participation in the act of discovery becomes the centerpiece of undergraduate education in research universities. By working together to formulate and promote an educational model that draws on their distinct characteristics and to communicate the value of an undergraduate education in this environment, research universities contribute to realizing a new paradigm for the 21st century.

Leaders: *Bernadette Gray-Little* and *Don Bialostosky*

3:30-4:45

Resource Network Meetings

- **Assessment Personnel**
Room 1115
Leader: *Janet A. Schmidt*
- **Undergraduate Research Program Directors**
Room 1109
Leaders: *Carolyn Merkel* and *Janet Stocks*

4:45-5:00

Concluding Remarks

Fort McHenry Room
Wendy Katkin

Presenter Biographies

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Bruce Alberts, President of the National Academy of Sciences. Dr. Alberts is known for his work in both biochemistry and molecular biology, and in particular for his study of the protein complexes that allow chromosomes to be replicated. Dr. Alberts graduated from Harvard College and earned a Ph.D. from Harvard University. He joined the faculty of Princeton University in 1966 and after ten years moved to the Department of Biochemistry and Biophysics at the University of California, San Francisco (UCSF), where he became chair. He is one of the original authors of *The Molecular Biology of the Cell*, now in its fourth edition and the leading advanced textbook in this field. His most recent text, *Essential Cell Biology* (1998), is intended to present this subject matter to a wider audience. Dr. Alberts has long been committed to the improvement of science education. While in San Francisco, he helped to create City Science, an ongoing program that links UCSF to the improvement of science teaching in San Francisco elementary schools. He brought this interest to the National Academy, where he actively promotes new ways of teaching and learning about science.

Thomas F. Banchoff, Professor of Mathematics at Brown University. Dr. Banchoff holds a bachelor's degree from the University of Notre Dame and a master's degree and Ph.D. from the University of California at Berkeley. He has won a number of teaching awards, including the Mathematical Association of America's National Award for Distinguished College or University Teaching of Mathematics, and was selected as Rhode Island Professor of the Year by the Carnegie Foundation for the Advancement of Teaching. Known for his pioneering research on the geometry of the fourth and higher dimensions, Dr. Banchoff is the author of more than eighty research articles and three books, *Beyond the Third Dimension*, *Linear Algebra Through Geometry*, and *Cusps of Gauss Mappings*, as well as a new introduction to *Flatland*. His 1978 film, *The Hypercube*, won the Prix de la Recherche Fondamentale at the Brussels Festival of Scientific and Technical Films. He is the founding editor of the electronic journal *Communications in Visual Mathematics* and past President of the Mathematical Association of America.

Karen W. Bauer, Assistant Professor of Psychology and Women's Studies and Assistant Director of the Office of Institutional Research and Planning at the University of Delaware. Dr. Bauer has primary responsibility for assessment of educational initiatives through the Office of Undergraduate Studies. She coordinated a multifaceted evaluation of the University of Delaware's Undergraduate Research Program with funding from a National Science Foundation Recognition Award for the Integration of Research and Education (RAIRE) and was Co-Principal Investigator on a second NSF grant in support of these studies. Dr. Bauer is the editor of *Campus Climate: Understanding the Critical Components for Today's Colleges and Universities*. She holds a bachelor's degree from East Tennessee State University, a master's degree from the University of Maryland, Baltimore County, and a Ph.D. from the University of Maryland, College Park.

Marcia Baxter Magolda, Professor of Educational Leadership, College Student Personnel Program at Miami University of Ohio. Dr. Baxter Magolda holds a master's degree and Ph.D. from Ohio State University. She teaches student development theory and inquiry courses. Her scholarship addresses the evolution of epistemological development in college and young adult life, the role of gender in development, and pedagogy to promote epistemological development. Her books include *Making Their Own Way: Narratives for Transforming Higher Education to Promote Self-Development, Creating Contexts for Learning and Self-Authorship: Constructive-Developmental Pedagogy*, and *Knowing and Reasoning in College*. Dr. Magolda is active in the American Educational Research Association, the Association for the Study of Higher Education, and the American College Personnel Association. She serves on the Board of Contributors of *About Campus*. She was inducted into the ACPA Senior Scholars and was named as one of forty young leaders in academia by *Change* magazine.

Ludy T. Benjamin, Jr., Professor of Psychology and Educational Psychology at Texas A&M University. Dr. Benjamin holds the Murray and Celeste Fasken Chair in Distinguished Teaching and a University Professorship in Undergraduate Teaching Excellence and is Director of Undergraduate Studies in Psychology. Dr. Benjamin has a bachelor's degree in psychology from the University of Texas at Austin and a Ph.D. in experimental psychology from Texas Christian University. His current research is on the history of American psychology, focusing on the history of applied psychology and on the public's perceptions and understanding of psychology. He also publishes on the teaching of psychology, emphasizing active learning in the classroom and promotion of research opportunities for undergraduate students. He is a Fellow of both the American Psychological Association and the American Psychological Society.

Joan S. Bennett, Professor of English and Coordinator of the Undergraduate Research Program at the University of Delaware. Dr. Bennett founded the University's Undergraduate Research Program in 1980. She was Co-Principal Investigator with University of Delaware President David Roselle on the University's National Science Foundation Recognition Award for the Integration of Research and Education (RAIRE) grant, which recognized the Undergraduate Research Program and related accomplishments in Problem-Based Learning. She holds a Ph.D. from Stanford University. Her own research is in Milton studies, for which she has twice been awarded the Hanford Prize for best publication in the field.

Don Bialostosky, Professor of English at Pennsylvania State University. After earning his degrees from the University of Chicago, Dr. Bialostosky taught at a series of public research universities, including the University of Utah, the University of Washington, Stony Brook University, and the University of Toledo. He has published books on William Wordsworth and written extensively on Mikhail Bakhtin. Liberal education and rhetoric among the liberal arts are

topics that have recurred in his work on both these authors and exercised him administratively since the beginning of his career. Dr. Bialostosky is a member of The Reinvention Center's Advisory Board.

Joseph Bordogna, Deputy Director and Chief Operating Officer of the National Science Foundation. Dr. Bordogna received a bachelor's degree and a Ph.D. from the University of Pennsylvania and a master's degree from the Massachusetts Institute of Technology. His career includes experience as a line officer in the U.S. Navy, a practicing engineer, and a professor. Prior to his appointment at the NSF, he served at the University of Pennsylvania as Alfred Fittler Moore Professor of Engineering, Director of The Moore School of Electrical Engineering, Dean of the School of Engineering and Applied Science, and Faculty Master of Stouffer College House, a living-learning student residence at the University. Dr. Bordogna was a founder of the Philadelphia Regional Introduction for Minorities to Engineering (PRIME). He is a Fellow of the American Association for the Advancement of Science (AAAS), the American Society for Engineering Education (ASEE), the Institute of Electrical and Electronics Engineers (IEEE), and the International Engineering Consortium.

Peter J. Bruns, Vice President for Grants and Special Programs at the Howard Hughes Medical Institute. Dr. Bruns received a bachelor's degree in zoology from Syracuse University and a Ph.D. in cell biology from the University of Illinois. He began his career at Cornell University, where he is now Emeritus Professor of Genetics. His research, currently funded by the National Science Foundation, is concerned with molecular and transmission genetics of *Tetrahymena thermophila*. He has held a Guggenheim fellowship, co-organized the First Cold Spring Harbor Meeting on Ciliate Molecular Biology, has been a member of the board of reviewers of the *Journal of Protozoology*, *Current Genetics*, and the *European Journal of Protistology*, and was Associate Editor for the *Journal of Experimental Zoology*. Dr. Bruns has been a member of peer review panels at the National Institutes of Health and the Howard Hughes Medical Institute. He recently was a member of the Committee on Design, Construction, and Renovation of Laboratory Facilities for the National Research Council.

Merry Bullock, Associate Executive Director for Science at the American Psychological Association. In this capacity, Dr. Bullock oversees APA programs addressing research and policy issues. She is also Deputy Secretary-General of the International Union of Psychological Sciences, Associate Editor of *The International Journal of Psychology*, and serves on the editorial board of *Applied Developmental Psychology*. Dr. Bullock holds a bachelor's degree from Brown University and a Ph.D. from the University of Pennsylvania. She is a Fellow of the American Psychological Association and the American Psychological Society. In addition to positions at the National Science Foundation and the American Psychological Association, she has taught and done research at the University of British Columbia in Canada, the Max

Planck Institute in Germany, and the University of Tartu in Estonia, and has served as Science Policy Advisor to the Estonian Academy of Sciences.

Janice DeCosmo, Assistant Dean for Undergraduate Education, affiliate faculty member in the Department of Earth and Space Sciences, and Director of the NASA Space Grant Consortium and the Undergraduate Research Program at the University of Washington. Dr. DeCosmo earned a Ph.D. in atmospheric sciences from the University of Washington, specializing in atmosphere-ocean interaction. Her research interests include marine boundary layer turbulence, mid-latitude storm development and climate change. She has taught science at all grade levels from kindergarten through university, and more recently has focused on helping university faculty find ways to include undergraduates in their research and to integrate research into their teaching.

Michael P. Doyle, Professor of Chemistry at the University of Arizona. Dr. Doyle was until recently President of the Research Corporation where he initiated and managed a comprehensive survey of the environment for research at predominantly undergraduate institutions. The survey findings were published in "Academic Excellence," a chapter in the volume *The SourceBook* (2001). Dr. Doyle was a founder and first President of the Council on Undergraduate Research, and he was the first chair of the executive committee for the National Conferences on Undergraduate Research. Dr. Doyle's research is focused on the design and development of transition metal catalysts. He has more than 230 publications and holds seven patents. More than 130 undergraduate students have been co-authors of peer-reviewed publications from research performed in his laboratory. He is a Fellow of the American Association for the Advancement of Science, has been an active member of the American Chemical Society, and served on panels for the National Science Foundation, National Research Council, National Institutes of Health, and the Dreyfus Foundation. He received his bachelor's degree from the College of St. Thomas in St. Paul and his Ph.D. from the University of Iowa.

Susan G. Forman, Vice President for Undergraduate Education and Professor, Graduate School of Applied and Professional Psychology, at Rutgers, The State University of New Jersey. Dr. Forman oversees university-wide programs that improve the undergraduate curriculum and teaching. Her initiatives include development of university-wide learning goals; faculty grants programs for curriculum innovation and teaching evaluation; expanded use of instructional technology in courses; new information technology to improve student services; development of core science courses for non-science majors, intercultural curricular and co-curricular programs, service learning opportunities, and programs to integrate research and undergraduate education including research intensive courses and undergraduate research opportunities; establishment of the Rutgers Award for Programmatic Excellence in

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Presenter Biographies

Undergraduate Education; and creation of the Rutgers Undergraduate Education Advisory Council with business and industry membership. She received her Ph.D. in school psychology from the University of North Carolina. She has published books, journal articles, and book chapters on organizational interventions in educational settings and the effectiveness of behavioral and cognitive-behavioral interventions with children and youth. Dr. Forman is a member of The Reinvention Center's Advisory Board.

Conrado M. Gempesaw, Jr., Professor of Food and Resource Economics and Vice Provost for Academic and International Programs at the University of Delaware. Dr. Gempesaw is responsible for coordinating undergraduate, graduate, international, and continuing education programs and initiatives at the university level, including the Undergraduate Research Program. His own research and teaching are in economics and agricultural economics. He holds a Ph.D. from Pennsylvania State University. An experienced faculty mentor to undergraduate research students, he served as an advisor to the National Science Foundation Recognition Award for the Integration of Research and Education (RAIRE) studies assessing the Undergraduate Research Program.

Bruno Giordani, Associate Professor of Psychiatry and Psychology at the University of Michigan. Dr. Giordani has been an active participant in the University of Michigan's Undergraduate Research Opportunities Program since the program's inception in 1989. Since that time he has mentored over 50 undergraduate students from diverse backgrounds, many who are now faculty and researchers around the country or in prestigious doctoral and medical programs. Dr. Giordani has created outstanding intergenerational mentorship relationships in his laboratory, from high school students to postdoctoral fellows. He has published with his students and is a strong advocate of undergraduate research. He has a Ph.D. in clinical psychology from the University of Virginia. His research focuses on the interaction of cognition and mobility performance across the lifespan; developmental cognitive and attention disorders; cross-cultural issues in assessment; neuropsychological and cerebral metabolic aspects of progressive memory disorders; and movement disorders in children and adults.

Edie N. Goldenberg, Professor of Political Science and Public Policy at the University of Michigan. From 1989 through 1998, Dr. Goldenberg served as Dean of Michigan's College of Literature, Science and the Arts. Her term is identified with major improvements in the undergraduate experience, significant strengthening of academic programs, and the successful completion of a \$180 million college fundraising campaign. She also held positions as Director of Michigan's Institute of Public Policy Studies and as Senior Executive at the U.S. Office of Personnel Management. Dr. Goldenberg is a member of the National Academy of Public Administration. She chairs the Committee on Education and Professional Development for the American Political Science Association (APSA) and currently serves on the APSA Taskforce on Graduate Education. She is an Academic

Fellow of the Carnegie Corporation and was a Fellow at the Center for Advanced Study in the Behavioral Sciences and the Woodrow Wilson Center of the Smithsonian Institution. Dr. Goldenberg holds a bachelor's degree from MIT and a master's degree and Ph.D. from Stanford. She has published numerous articles and two books: *Campaigning for Congress* (with Michael W. Traugott) and *Making the Papers*.

Bernadette Gray-Little, Professor of Psychology and Executive Associate Provost at the University of North Carolina at Chapel Hill. In her current role, Dr. Gray-Little has responsibility for undergraduate academic programs. Previously she has served as Senior Associate Dean for Undergraduate Education in the College of Arts and Sciences and as Chair of the Department of Psychology. She received a bachelor's degree from Marywood College and a master's degree and Ph.D. in psychology from St. Louis University. Her research reflects a continuing interest in the relation of social and cultural factors to personality and psychopathology. She has been a Social Science Research Council Fellow and a recipient of a Ford Foundation Senior Scholar Fellowship through the National Research Council. Dr. Gray-Little has served on the American Psychological Association's Board of Educational Affairs, the Board of Directors of Division 12, and the Committee on Accreditation. She is Associate Editor of *The American Psychologist*. Dr. Gray-Little is a member of The Reinvention Center's Advisory Board.

William Scott Green, Professor of Religion, Philip S. Bernstein Professor of Judaic Studies, and Dean of the College at the University of Rochester. Dr. Green joined the University of Rochester faculty in 1974 and founded the popular Department of Religion and Classics in 1983. He is also education director of the University's joint archaeological excavation with the Israel Antiquities Authority at Yodefat. He has written extensively on religion, ancient Judaism, and higher education, and has served on the board of the Association of American Colleges, the chief academic organization for promoting liberal education. As the principal administrator of undergraduate education at the University, he has led in developing the distinctive system of majors and clusters known as the Rochester Curriculum. Dr. Green is a member of The Reinvention Center's Advisory Board.

Sandra R. Gregerman, Director of the Undergraduate Research Opportunity Program (UROP) at the University of Michigan. Since 1992, Ms. Gregerman has overseen the expansion of UROP from 150 students and faculty to 900 students and 550 faculty participants. She received a bachelor's degree in political science from the University of California at Davis and a master's degree from the University of Michigan School of Natural Resources and Environment. In her work in higher education, she has focused on issues related to women in science and retention of historically underrepresented students. Ms. Gregerman is the recipient of an Outstanding Freshman Advocate Award from the National Resource Center for the Freshman Year Experience. The

Undergraduate Research Opportunity has won several awards under her leadership, including the National Science Foundation Recognition Award for the Integration of Research and Education, the White House Presidential Award for Excellence in Science, Engineering, and Mathematics Mentoring, and a Hesburgh Award.

Joan Krejci Griggs, Program Officer and Coordinator, FIPSE Comprehensive Program, U.S. Department of Education. Dr. Griggs has had two stints as a Program Officer at the Fund for the Improvement of Postsecondary Education (FIPSE). In the mid-90s, she specialized in teacher development, K-16 initiatives, school-college collaborations, and workforce education projects funded by the Comprehensive Program. In 1999, she returned to help launch the new Learning Anytime Anywhere Partnerships (LAAP) distance education grant competition, including directing the evaluation efforts related to the program. Most recently, Dr. Griggs has taken on the coordination of the Comprehensive Program, FIPSE's flagship grant competition. FIPSE is currently observing its 30th anniversary. Previously, Dr. Griggs was the Director of the Institute for Research and Assessment in Higher Education at the University of Maryland University College; prior to that, she held leadership posts in continuing/graduate education at the University of Maryland College Park, SUNY Albany, and Union College. Earlier in her career, Dr. Griggs taught English and directed college counseling/-career centers. Her Ph.D. is in program development and evaluation. She has recently published a book on *Effectiveness and Efficiency in Higher Education for Adults*.

John Guillory, Professor and Chair of the Department of English at New York University. Dr. Guillory holds a bachelor's degree from Tulane University and a Ph.D. from Yale University. His major interests include Renaissance poetry, Shakespeare, Milton, literature and science in the Renaissance, the history of criticism, the sociology of literary study, and twentieth-century literary theory. His books include *Poetic Authority: Spenser, Milton, and Literary History and Cultural Capital: The Problem of Literary Canon Formation*, for which he received the 1994 Rene Wellek Award from the American Comparative Literature Association. He recently concluded terms as a member of the Modern Language Association (MLA) Committee on the Bibliography of the Teaching of Literature, the MLA Committee on Professional Employment, and the MLA Nominating Committee for Second Vice President. He is on the editorial board of the MLA publication *Profession*, and previously served on the Executive Committee of the Folger Shakespeare Library in Washington, D.C.

Robert L. Hampton, Professor of Sociology, Associate Provost for Academic Affairs, and Dean for Undergraduate Studies at the University of Maryland at College Park. As a campus advocate for excellence in undergraduate education, Dr. Hampton has been involved in the development of several learning communities, initiated an annual conference for academic advisors, created a Center for Undergraduate Research, and created a National Scholarship Office. He has taught and published extensively in the field of family violence and is one of the co-founders of the Institute

on Violence in the African American Community. Dr. Hampton holds a bachelor's degree from Princeton University and a Ph.D. from the University of Michigan.

Diane Harvey, Undergraduate Studies Librarian at the University of Maryland Libraries. Dr. Harvey works closely with undergraduate research programs at the University, and teaches several courses that provide undergraduates with research experiences. She received degrees from Rutgers University and Johns Hopkins University, and has worked in a variety of university and specialized libraries, including Johns Hopkins, Rutgers, and the Newseum. She was the recipient of a Lilly-CTE Teaching Fellowship at the University of Maryland in 2001-2002, and was awarded a Scholarship of Teaching and Learning grant for 2002-2003, to investigate collaboration between librarians and classroom faculty in teaching about academic integrity.

Nils Hasselmo, President of the Association of American Universities and President Emeritus of the University of Minnesota. Dr. Hasselmo completed degrees in Scandinavian Languages and Literature and English at Uppsala University in Sweden before coming to the United States on the Mauritzson Scholarship at Augustana College, Rock Island, Illinois, in 1956. He received his Ph.D. in linguistics from Harvard University in 1961. He has taught at the Universities of Wisconsin and Minnesota and at other universities in the United States and Sweden on a visiting basis. He served as department head, Associate Dean of Liberal Arts, and Vice President for Administration and Planning at the University of Minnesota, and as Senior Vice President for Academic Affairs and Provost at the University of Arizona, before returning to Minnesota in 1989 as President. He assumed the presidency of the Association of American Universities in 1998. His scholarly interests have focused on bilingualism and language contact, including books and articles on the Swedish language in America.

Gregory Henschel, Senior Policy Analyst, Office of Educational Research and Improvement, United States Department of Education. Mr. Henschel serves as program officer for the National Center for Postsecondary Improvement, which has responsibility for research projects on the advancement of practice in higher education teaching, learning, assessment, organization, and management. He has developed and led research projects on a wide range of topics for the federal government, including rising college tuitions, service-learning, student financial assistance, diversity, and academic quality. Recently, he co-authored a handbook on how families pay for college, aimed at increasing the awareness of college affordability. Before joining the Department of Education, he was a legislative assistant in the U.S. Congress.

Andrea Hershatter, Assistant Dean and Director of the Bachelor of Business Administration (BBA) Program in the Goizueta Business School at Emory University. Ms. Hershatter teaches in Organization and Management, specifically Entrepreneurship and Corporate Innovation. Her research focuses on

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intellectual capital, creativity, innovation, and entrepreneurship. She has been at Emory for fourteen years and was the Associate Dean for all academic degree programs prior to assuming directorship of the undergraduate program. She is the recipient of the 2001 Don Keough Award for Excellence and the 2002 Emory University Williams Distinguished Teaching Award. She holds an M.B.A. from the Fuqua School at Duke University. She serves on numerous national, university, and business school committees, and is a frequent presenter on the topics of entrepreneurship, the millennial generation, and management education.

Gary Hochberg, Associate Dean for the Undergraduate Program at the John M. Olin School of Business at Washington University in St. Louis. Dr. Hochberg has a bachelor's degree in philosophy from The American University and a master's degree and Ph.D. in philosophy from Brown University. After teaching in the Department of Philosophy at Bucknell University from 1971-81, he joined the administration of the Olin School in 1982. Dr. Hochberg's responsibilities in the Olin School include the direction of all academic student services for Olin's 775 full-time undergraduates and representing Olin on a number of university-wide committees dealing with undergraduate issues.

Daniel Holliman, Assistant Professor, Department of Political Science, Maxwell School of Citizenship and Public Affairs, and Assistant Vice Chancellor for Academic Affairs, Office of the Provost at Syracuse University. Dr. Holliman teaches courses in American politics, political participation, public opinion, and political behavior. His research specialties include comparative race and politics, ethnic conflict, and nationalism. As Assistant Chancellor, his responsibilities involve institution-wide academic planning and policy implementation; strategic research partnership development; academic affairs assessment and research; multicultural pedagogy and curriculum infusion; and the development of signature student initiatives that enhance undergraduate research, theory, and practice, community-based learning, internationalization, and excellence in communication. Dr. Holliman received his Ph.D. in political science at the University of Michigan, Ann Arbor.

Patricia Iannuzzi, Associate University Librarian and Director of the Main and Undergraduate Libraries at the University of California, Berkeley. Dr. Iannuzzi has held previous positions in libraries at Florida International University, Yale University, and Tufts University. She chaired the task force sponsored by the Association of College and Research Libraries that worked with the American Association of Higher Education, the Middle States Commission on Higher Education, and other higher education representatives to develop *Information Literacy Competency Standards for Higher Education*. She speaks and publishes on topics related to information literacy and collaboration, student learning outcomes and assessment, information literacy and accreditation, and the educational role of the library.

Wendy Katkin, Director of The Reinvention Center at Stony Brook University. Dr. Katkin has long been involved in initiatives to enhance undergraduate education at research universities. As Associate Provost for Educational Initiatives at Stony Brook University, she provided leadership in the development and implementation of programs to improve teaching and student learning including Stony Brook's nationally recognized Women in Science and Engineering project (WISE) and many of the University's undergraduate research programs. Dr. Katkin has a master's degree in psychology and a Ph.D. in English from the University at Buffalo. She has written on issues relating to undergraduate education and to women in science and is co-editor of a volume, *Beyond Pluralism: Essays on the Definition of Groups and Group Identities in American History* (1998).

Stanley N. Katz, Professor at The Woodrow Wilson School, and Director of the Center for Arts and Cultural Policy Studies at Princeton University, and President Emeritus of the American Council of Learned Societies. The author and editor of numerous books and articles, Dr. Katz is a noted authority on American legal and constitutional history and has served as president of the Organization of American Historians and the American Society for Legal History, and as vice president of the American Historical Association. He is a Fellow of the American Society for Legal History, the American Academy of Arts and Sciences, and the Society of American Historians. Dr. Katz received bachelor's, master's, and Ph.D. degrees from Harvard University. He is co-editor of *Mobilizing for Peace: Conflict Resolution in Northern Ireland, South Africa, and Israel/Palestine*. His current research focuses upon the relationship of constitutionalism and civil society, both in the United States and in emerging democracies around the world.

William E. Kelly, Professor of Civil Engineering and former Dean of the School of Engineering at the Catholic University of America. Dr. Kelly is a member of the American National Standards Institute (ANSI) Board of Directors and chairs the ANSI Board ad hoc Committee on Standards Awareness and Education and the new Personnel Certification Accreditation Committee. He is also a member of the American Society of Civil Engineers (ASCE) Subcommittee on Sustainability and was a member of the ASCE task committee on the first professional degree. He is past chair of the Accreditation Board for Engineering and Technology (ABET) Engineering Accreditation Commission. Dr. Kelly holds bachelor's, master's and Ph.D. degrees from the University of Notre Dame and has taught at Notre Dame, the University of Rhode Island, and the University of Nebraska-Lincoln. He is a Fellow of the American Society of Civil Engineers and a registered Professional Engineer in Rhode Island and Nebraska.

Shirley Strum Kenny, President of Stony Brook University. Dr. Kenny has combined a teaching and research career with administrative leadership. She taught at the University of Texas, Gallaudet College, Catholic University, the University of Delaware, and the University of Maryland. At Maryland, she served as Chair of the English Department and Provost of Arts and

Humanities. She became President of Queens College in 1985 and President of Stony Brook University in 1994. In order to create a new model of undergraduate education for major research universities, she established the Boyer Commission on Educating Undergraduates in the Research University. Funded by the Carnegie Foundation for the Advancement of Teaching, the Commission in 1998 published *Reinventing Undergraduate Education: A Blueprint for America's Research Universities*. Dr. Kenny holds bachelor's degrees in English and journalism from the University of Texas, a master's degree from the University of Minnesota, and a Ph.D. from the University of Chicago. She has published five books and numerous articles on Restoration and eighteenth-century British drama.

Alan Kraut, Executive Director of the American Psychological Society (APS). Dr. Kraut received his Ph.D. in developmental psychology from Syracuse University in 1977. Before joining the APS as its first director, he was on the faculty of Virginia Polytechnic Institute and State University and served in various positions at the American Psychological Association in which he oversaw the development of the APA's first public policy and lobbying offices, its public information arm, and its first administrative directorate for science.

David A. Martinez, Humanities and Social Sciences Research Mentor for the Undergraduate Research Program at the University of California at Los Angeles. Mr. Martinez has a bachelor's degree from Stanford University and is a Ph.D. candidate in English at UCLA, specializing in 20th-century American literature and Chicano/a literature. His dissertation examines the discursive relationship between contemporary Chicano/a prose fiction and popular culture, particularly in the areas of music and film.

Carolyn Ash Merkel, Director of Student-Faculty Programs at the California Institute of Technology. Ms. Merkel administers four undergraduate research programs involving close to 400 students who participate annually: the Summer Undergraduate Research Fellowships (SURF), Minority Undergraduate Research Fellowships (MURF), Beckman Scholars, and the Axline SURF program for incoming freshmen. Ms. Merkel recently completed a pilot project for the Association of American Universities to study undergraduate research in six research universities. She serves on the Board of Governors for the National Conferences on Undergraduate Research and was a founder of the Southern California Conference on Undergraduate Research. She has been affiliated with the Council on Undergraduate Research for many years, and served as an At-Large Councilor. She has been recognized for her contributions by the Caltech Chapter of Sigma Xi and by Caltech, which designated her Woman of the Year and an Honorary Alumna. She holds a bachelor's degree in liberal studies from Mt. Saint Mary's College in Los Angeles.

Barbara Nolan, Robert C. Taylor Professor of English and former Vice Provost for Instructional Development and Innovation at the University of Virginia. As Vice Provost, Dr. Nolan oversaw a number of programs and initiatives related to faculty development and student learning. Her teaching interests

include Chaucer's poetry, medieval romance, medieval bawdy stories in their manuscript contexts, Ovid's *Art of Love* and *Remedies of Love* in relation to medieval Latin and vernacular poetry, spiritual autobiography, and juxtapositions of the sacred and the profane in medieval fiction. Dr. Nolan was a Trustee of the New Chaucer Society and is on the advisory boards of *Envoi: A Review Journal of Medieval Literature* and *New Literary History*. She is the author of numerous articles and two books, *The Gothic Visionary Perspective* and *Chaucer and the Tradition of the Roman Antique*. She holds a bachelor's degree from Trinity College and a master's degree and Ph.D. from the University of Wisconsin. Dr. Nolan is a member of The Reinvention Center's Advisory Board.

Julian M. Olf, Professor of Dramaturgy and Graduate Program Director at the University of Massachusetts at Amherst. Dr. Olf is the recipient of a master's degree in comparative literature from Columbia University and a Ph.D. in drama and cinema from New York University. His 37-year career spans teaching positions at City University of New York, Stony Brook University, the University of Toledo, and the University of Massachusetts at Amherst, including 21 years as a department chair. His numerous directing credits include Stravinski's *L'Histoire du Soldat*, with the Toledo Symphony Orchestra, and Heiner Müller's *Medeamaterial*, for the Sixteenth Amherst Colloquium on German Literature. A former editor of *Theatre Journal*, Dr. Olf was on the founding Board of the Association for Theatre in Higher Education and served two terms as its Vice President for Research and Publications. He is also a Founding Trustee of the Pioneer Valley Charter High School for the Performing Arts. Dr. Olf is an author of fiction, plays, and screenplays.

Jeanne E. Pemberton, John and Helen Schaefer Professor of Chemistry at the University of Arizona. Dr. Pemberton received a bachelor's degree with honors in chemistry from the University of Delaware and a Ph.D. in chemistry from the University of North Carolina at Chapel Hill. She started as Assistant Professor of Chemistry at the University of Arizona in 1981, becoming the John and Helen Schaefer Professor of Chemistry in 2001. In addition to overseeing an active research program in the area broadly defined as interfacial chemistry, she has served as a member of the National Research Council Board on Chemical Sciences and Technology, the Department of Energy Council on Chemical Sciences, and the National Science Foundation Mathematical and Physical Sciences Advisory Committee. She has been a member of the American Chemical Society's Committee on Professional Training since 1993, serving as its Chair from 2000-2002. She has been recognized for both her teaching and her research, twice receiving the National Science Foundation's Award for Special Creativity.

Susan Prado, Founding Director of the Undergraduate Research Opportunities Program (UROP) and Founder and Executive Director of the Center for Excellence in Teaching at Boston University. Dr. Prado is project director on two Beckman Scholars awards and co-project director on a NIH-Summer Research Experiences for Undergraduates grant. She

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established a SURF program, with the Northeast Alliance for Graduate Education and the Professorate at UMass-Amherst, to provide research opportunities for underserved undergraduates. Dr. Prado holds both a master's and Ph.D. degree in musicology from the College Conservatory of Music of the University of Cincinnati. She has taught undergraduate courses at Boston University and the University of Cincinnati and graduate courses at Boston University, including Impressionism in Music, Music Aesthetics and Criticism, and The Mass and Motet in the Sixteenth Century. Her research interests include late-19th century French music, aesthetics, film music, and women composers. She has published in the *New Grove Dictionary of Music and Musicians* and in *Contemporary Music Review*. She is a contributing editor to the forthcoming new complete works edition of *Carl Phillip Emanuel Bach*, published by the Packard Humanities Institute.

Patricia Pukkila, Associate Professor of Biology and Director of the Office of Undergraduate Research at the University of North Carolina at Chapel Hill. Dr. Pukkila earned a bachelor's degree from the University of Wisconsin-Madison and a Ph.D. from Yale University. She has received both a Tanner Award and a Bowman and Gordon Gray Associate Professorship for excellence in undergraduate teaching. She organized a multi-campus undergraduate research symposium for the North Carolina state government in 2001, and is currently chairing a subcommittee of the UNC System Consortium on Undergraduate Research to expand symposium participation to all 16 system campuses in 2003. She is a Councilor in the At-Large Division of the Council on Undergraduate Research, a member of the Education Committee of the American Society for Cell Biology, and she edits the Genetics Education section of the journal *Genetics*. Her research focuses on the genetic basis of chromosome behavior during meiosis.

Judith A. Ramaley, Assistant Director for Education and Human Resources at the National Science Foundation. Dr. Ramaley has been a professor of biology at five universities, served as President of the University of Vermont and Portland State University in Oregon, and held senior administrative positions at the State University of New York at Albany, the University of Kansas, and the University of Nebraska. She served as chair of the American Council on Education's Commission on Women in Higher Education and the National Association of State Universities and Land Grant Colleges (NASULGC) Commission on the Urban Agenda, and currently chairs a committee of the U.S. Department of Education's National Advisory Council for School-to-Work Opportunities and the Association of American Colleges and Universities National Panel on Greater Expectations. Dr. Ramaley holds a bachelor's degree from Swarthmore College and a Ph.D. from the University of California, Los Angeles. She is the author of several seminal publications on educational reform and its relation to society.

David P. Roselle, President of the University of Delaware. Dr. Roselle has been a member of the faculty at the University of Maryland, Louisiana State University, and Virginia

Polytechnic Institute and State University (VPI). At VPI, he served as Dean of Research and Graduate Studies and as Provost, a position he held until assuming the Presidency at the University of Kentucky. Dr. Roselle has a bachelor's degree from West Chester (PA) University and a Ph.D. in mathematics from Duke University. He is a member of the Mathematical Association of America, the National Council of Teachers of Mathematics, the Society for Industrial and Applied Mathematics, and the American Mathematical Society. He was Associate Editor of *The American Mathematical Monthly* and referees several journals, including *Mathematical Reviews*.

Clinton Rubin, Professor and Chair of the Department of Biomedical Engineering and Director of the Center for Advanced Technology in Medical Biotechnology at Stony Brook University. Dr. Rubin has a bachelor's degree from Harvard College and a Ph.D. from Bristol University. His research focuses on using biophysical stimuli to accelerate the healing process. His work is currently funded by the National Institutes of Health, the National Aeronautics and Space Administration, the National Space Biomedical Research Institute, the Whitaker Foundation, private industry, and the New York State Office of Science, Technology, and Academic Research. Dr. Rubin holds nine patents in the area of wound repair and treatment of bone disease and is a founder of a publicly traded medical device company and an early stage company focused on diagnostics.

Matthew S. Santirocco, Professor of Classics, Angelo J. Ranieri Director of Ancient Studies, and Dean of the College of Arts and Science at New York University. Before arriving at NYU, Dr. Santirocco was Professor and Chair of Classical Studies and Dean of the College of Arts and Sciences at the University of Pennsylvania. Dr. Santirocco's teaching ranges widely and includes courses on Latin literature, Greek poetry, mythology, and the classical tradition. At the University of Pennsylvania he developed humanities curricula in the MBA and Executive Education Programs of the Wharton School. At NYU he helped to design a new core curriculum, the Morse Academic Plan. Educated at Columbia and Cambridge Universities, he is the author of a book on Latin lyric poetry, an edited volume of essays on the classical tradition, and many scholarly articles. He is currently working on a book about the poetics of patronage in Augustan Rome. He served as Vice President for Professional Matters for the American Philological Association, was the editor of the Association's two monograph series, *American Classical Studies* and *Philological Monographs*, and is currently the editor of *Classical World*. Dr. Santirocco is a member of The Reinvention Center's Advisory Board.

Janet A. Schmidt, Director, Engineering Research at the University of Maryland at College Park. Dr. Schmidt is an educational psychologist who has been responsible for developing an assessment plan for the College of Engineering for external accreditation purposes focusing on student learning outcomes. She is interested in issues related to student retention and the success of women in science, technology, engineering, and mathematics

(STEM) fields. Dr. Schmidt did her baccalaureate work at Allegheny College and received her master's degree from Ohio State. Her Ph.D. is from the University of Minnesota.

Martin Schoonen, Professor of Geosciences and Associate Vice President for Research at Stony Brook University. Dr. Schoonen's research interests are in environmental sciences, astrobiology, and geochemistry. Current projects that his research group is working on include: development of new abatement strategies for acid mine drainage; kinetics of electron transfer reactions involving minerals; and mineral-based catalysis in pre-biotic synthesis. His group is part of Stony Brook's newly established NSF-funded Center for Environmental Molecular Science. Dr. Schoonen, a member of NASA's Astrobiology Institute, received his Ph.D. from Pennsylvania State University in 1989. In his capacity as Associate Vice President for Research at Stony Brook he is charged with fostering interdisciplinary research on campus.

Said M. Shokair, Director of the Undergraduate Research Opportunities Program (UROP) and the Summer Undergraduate Research Program (SURP) at the University of California at Irvine. Mr. Shokair has extensive experience in directing, planning, executing, and analyzing programs that promote faculty-mentored undergraduate research and other academic support programs. He also has administered federally-funded programs, including scholarship programs funded by the National Science Foundation and the National Aeronautics and Space Administration, a curriculum-development grant program funded by the United States Department of Energy, and an undergraduate research fellowship program funded by the National Institute of Standards and Technology. A former member of the Institutional Review Board, his academic background is in electrical engineering with an emphasis in biomedical applications.

Judith L. Smith, Professor of Physiological Science and Vice Provost for Undergraduate Education in the College of Letters and Science at the University of California at Los Angeles. Dr. Smith is UCLA's first Vice Provost for Undergraduate Education. In this post, newly created in 1997, she is responsible for many programs that foster innovation and excellence in undergraduate education, including General Education, College Honors, the Student Research Programs, the College's Writing II Program, freshman orientation, the Office of Instructional Support, and student diversity programs. She received a Ph.D. from the University of Wisconsin and began her career at UCLA as Assistant Professor in Kinesiology. Early in her career, she was recognized for innovative teaching, and was only the second woman to receive a UCLA Distinguished Teaching Award. She was the Chair of her department for five years and co-founded the undergraduate Neuroscience Program, an inter-departmental program that spans the College of Letters and Science and the School of Medicine. Her research on spinal cord physiology and limb dynamics was continuously funded by the NIH for 27 years, and she received a Javits Neuroscience Research Award in 1990. Dr. Smith is a member of The Reinvention Center's Advisory Board.

Glenn Starkman, Associate Professor of Physics and Astronomy and Associate Provost for the Undergraduate Initiative at Case Western Reserve University. Dr. Starkman received a bachelor's degree in mathematics, physics, and astrophysics from the University of Toronto and a Ph.D. in physics from Stanford. He joined the faculty of CWRU in 1995, after holding positions at the Institute for Advanced Study in Princeton, the Canadian Institute for Theoretical Astrophysics, and the Canadian Institute for Advanced Research. His research is in theoretical particle-physics and cosmology. He is an author of numerous articles, co-author of a handbook on hands-on techniques for teaching cosmology, and is under contract for a freshman cosmology text. He received the National Science Foundation's Early Career Development Award for junior faculty who combine promise in research and teaching. Dr. Starkman currently leads a major strategic re-imagining of and reinvestment in undergraduate education at CWRU, designed to tie education to active experiences inside and outside the classroom. Dr. Starkman is a member of The Reinvention Center's Advisory Board.

Janet Stocks, Director of the Undergraduate Research Initiative at Carnegie Mellon University. The Initiative provides seed funds for undergraduate research projects, recognizes students conducting research, funds undergraduates presenting their findings at academic conferences, and presents an annual undergraduate research symposium. Dr. Stocks has a Ph.D. in sociology from the University of Pittsburgh. Her research interests include gender issues, education, religion, global environmental change, social change, and ethnography. She is currently participating in two research projects: an international study investigating how couples negotiate their daily lives and a study of informal science learning among middle-school girls.

Judith Sunley, Senior Advisor in the Office of the Director at the National Science Foundation. Dr. Sunley also has served as Interim Assistant Director for the Directorate for Education and Human Resources, Assistant to the Director for Science Policy and Planning, Executive Officer for Mathematics and Physical Sciences, and Associate Program Director, Deputy Division Director, and Division Director in the Mathematical Sciences Division of the NSF. In the spring of 2002, she spent a sabbatical term at The Reinvention Center at Stony Brook University. She is spending the fall semester at the Provost's Office at the University of Maryland, Baltimore County. Before coming to the NSF, Dr. Sunley held positions as faculty member, Department Chair, and Associate Dean at American University. She received bachelor's and master's degrees from the University of Michigan and a Ph.D. from the University of Maryland, all in mathematics.

Robert Thompson, Dean of Trinity College of Arts and Sciences and faculty member in the Departments of Psychiatry and Behavioral Sciences, Pediatrics, and Psychology at Duke University. Dr. Thompson also served as Director of the Undergraduate Program in Human Development and Co-Director of the Faculty Associates Program. His research interests

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address how biological and psychosocial processes act together in development. He has authored more than 100 scientific publications, including a recent book, *Adaptation to Chronic Childhood Illness*. Dr. Thompson served as President of the Association of Medical School Professors of Psychology. He received the Association's Distinguished Researcher Award and the Distinguished Service Award of the Society of Pediatric Psychology. He holds a bachelor's degree from LaSalle College and a Ph.D. in clinical psychology from the University of North Dakota.

J. Kim Vandiver, Professor of Ocean Engineering and Dean for Undergraduate Research at the Massachusetts Institute of Technology. Dr. Vandiver also directs MIT's Edgerton Center and the Undergraduate Research Opportunities Program (UROP), which involves 80 percent of MIT's undergraduate students in research projects with research staff and faculty. Throughout his teaching career, Dr. Vandiver has stressed the importance of hands-on learning. In 1992, he founded the Edgerton Center at MIT, which provides resources for MIT students engaged in hands-on educational projects. In 1998, he was the recipient of the MIT President's Award for Community Service for the Edgerton Center's work with the Cambridge Public Schools. In 2001, he was honored as a MacVicar Fellow for excellence in teaching. His research focuses on the dynamics of offshore structures and flow-induced vibration. Dr. Vandiver received a bachelor's degree in engineering from Harvey Mudd College of Science and Engineering, a master's degree in ocean engineering from MIT, and a Ph.D. in oceanographic engineering from the MIT and Woods Hole Oceanographic Institution Joint Program.

Lee Willard, Associate Dean of Trinity College of Arts and Sciences at Duke University. Dr. Willard is responsible for academic planning, programmatic development, and fundraising at Trinity College, Duke's undergraduate liberal arts college. Through her efforts related to strategic planning and her service on various University committees, she has been involved in Arts and Sciences and the New Millennium (the Arts and Sciences Plan), Curriculum 2000 (the revision of the undergraduate curriculum), the implementation of the East Campus residential plan, and the development of a series of institutional grants, ranging from the development of the first-year FOCUS Program and the Markets and Management certificate to undergraduate science education and facilities renovation. Dr. Willard holds a bachelor's degree from Agnes Scott College and a Ph.D. in classics from the University of North Carolina at Chapel Hill. Dr. Willard is a member of The Reinvention Center's Advisory Board.

Reed Wilson, Director of the College of Letters and Science Undergraduate Research Center for Humanities and Social Sciences at the University of California at Los Angeles. Dr. Wilson has undergraduate and graduate degrees from the UCLA Department of English where he now teaches poetry writing. He has taught at UCLA, Lafayette College, University of Southern California, and California Institute of the Arts (CalArts), where he served as the first Undergraduate Writing Coordinator. His poems have appeared in *The Antioch Review* and elsewhere.

William B. Wood, Professor of Molecular, Cellular and Developmental Biology at the University of Colorado, Boulder. Dr. Wood holds a bachelor's degree from Harvard College and a Ph.D. in biochemistry from Stanford University, and he is a member of both the National Academy of Sciences and the American Academy of Arts and Sciences. His current research is on the genetic control and molecular biology of axis formation, pattern formation, and sex determination in embryos of the nematode *C. elegans*. Earlier, he was lead author of the widely used textbook *Biochemistry: A Problems Approach*, which helped to introduce problem-based learning to biochemistry. He was a member of the National Research Council Committee that produced the recent report *Learning and Understanding: Improving Advanced Study of Mathematics and Science in U.S. High Schools*, and he currently serves on the editorial board of *Cell Biology Education*.

Ellen Woods, Senior Associate Vice Provost for Undergraduate Education at Stanford University. Dr. Woods earned her bachelor's degree at the University of Pittsburgh and her Ph.D. in French and humanities at Stanford University with a specialization in medieval literary studies. She has held teaching appointments at Stanford in the Department of French and in the Western Culture Program, a required interdisciplinary humanities program for freshman. Since 1983, Dr. Woods has held a variety of administrative positions at Stanford, serving as "innovation manager" for a number of recent reforms of undergraduate education. These include the conceptualization and implementation of the Honors College, Sophomore College, Stanford Introductory Seminars, the Introduction to the Humanities program, Undergraduate Research Grant Programs, and several writing initiatives. Among other areas of responsibility are curricular review and innovation, general education requirements, teaching awards, advising, and academic technology. Dr. Woods is a member of The Reinvention Center's Advisory Board.

Andrew L. Zydney, Endowed Bio-Chair and Professor in the Department of Chemical Engineering at Pennsylvania State University. Dr. Zydney was a member of the faculty advisory board for the University of Delaware's Research-Based Education program from 1997-2001. He also directed the Delaware Chemical Engineering Department's Research Experiences for Undergraduates program and has personally advised more than 35 undergraduate research assistants. Dr. Zydney has received several teaching awards, including the University of Delaware's Excellence in Teaching Award and the Distinguished Teacher Award from the American Society for Engineering Education.

Acknowledgements

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