

Comments and Introduction of Carolyn Merkel
Remarks by Nils Hasselmo, President, Association of American Universities

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Research University*
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I am very pleased to address the participants in this important conference on undergraduate education in research universities. I speak as a representative of one of the co-sponsors of the conference, the Association of American Universities.

But - I also speak out of a strong personal interest in the topic of this conference – undergraduate education in research universities.

I want to express my appreciation for this initiative to Wendy Katkin, Director of the Reinvention Center at Stony Brook University; and to her boss, President Shirley Strum Kenny. I also want to thank all of you, the distinguished guests and participants in this important conference, for your work in the vineyard.

Undergraduate education and the AAU

The Association of American Universities is primarily devoted to university research and graduate education. However, it has been abundantly clear over the past few years that the quality of undergraduate education in our research universities is an issue of great importance. AAU and its member presidents and chancellors have devoted a good deal of energy to this issue – as is appropriate.

Today you will be hearing from **Carolyn Merkel**, Director of Student-Faculty Programs at Caltech, about one of AAU's initiatives in regard to undergraduate education in research universities – a study of research opportunity programs in three public and three private research universities.

Before I introduce our speaker, let me comment briefly on some of the ways undergraduate education has been addressed by the AAU and its members.

In 1997, six AAU presidents wrote to the then president of AAU requesting that AAU address some important issues in undergraduate education, and preparation for such education in the K-12 system. You may be interested in knowing that the six were:

Bob Berdahl, then President of the University of Texas at Austin;
Gerhard Casper, then president of Stanford;
Chuck Vest, president of MIT;
Lee Bollinger, then president of the University of Michigan;
Neil Rudenstine, then president of Harvard; and
David Ward, then chancellor of the University of Wisconsin, Madison.

The six presidents made specific reference to the *National Science Education Standards*, released the previous year, referred to by Bruce Alberts in his keynote address this morning.

The three topics they wanted AAU to address were:

- Admissions policy.
- Teacher preparation.
- Articulation "between the K-12 curriculum and the introductory core, or remedial courses in science and mathematics offered at college."

AAU has followed up on these topics – in the case of the third topic – articulation in regard to science and mathematics – through support for efforts undertaken by the National Research Council and the National Science Foundation.

AAU established a Committee on Undergraduate Education, chaired by then president of the University of Iowa, Mary Sue Coleman (now at Michigan). A Task Force on K-16 Education was appointed to address the issues, and was chaired by Professor Ron Latanision of MIT. Three members of the task force also serve on the Advisory Board of the Reinvention Center: Susan Froman, William Scott Green, and Matt Santirocco. Wendy, we pick the same good people, don't we!

Without going into a lot of detail, let me comment briefly on some projects that were introduced through the committee and task force:

1. A project entitled "Standards for Success."

This project – which is supported by a sizeable grant from The Pew Charitable Trust – focuses on preparation standards, including state standards. 18 AAU universities participate in a consortium that supports this project, both financially and with expertise.

Professor David Conley of the University of Oregon is the executive director of the project. He and his associates have reviewed state standards and have provided summaries and overviews of these standards. They have also conducted nine town meetings involving over 450 faculty from 20 AAU universities concerning appropriate preparation for undergraduate work in AAU universities. The resulting standards of preparation – "Knowledge and Skills for University Success" – will be disseminated on CD to all high schools in the country – I expect within the next few months.

2. A "Resolution on Teacher Education"

This resolution, adopted by the AAU membership in April of 1999, placed responsibility for teacher education squarely on the university as a whole, not just on colleges of education, and stressed the continuing role of universities in teacher development programs.

3. An Invitational "Forum on Exemplary Practices and Challenges in Teacher Education"

An Invitational Forum on "Exemplary Practices and Challenges in Teacher Preparation" was convened by AAU September 30-October 2, 2001, in Cambridge, MA. Although it took place in the wake of 9/11, it was well attended, including thirteen university teams that made presentations. The teams consisted of "faculty, administrators, and practicing teachers." Their presentations dealt with

- preservice teacher education,
- continuing education of teachers; and
- doctoral programs that emphasize the preparation of the next generation of teacher educators in mathematics, science, or technology."

You will soon be able to see the materials from the forum on the AAU web site (www.aau.edu). So far, these materials have been available only on Penn State's web site, since representatives from that university did the editing.

One outcome is also that the education deans of AAU have decided to organize themselves as a group. I had lunch yesterday with Edna Szymanski, Dean of the College of Education at the University of Maryland, College Park, to discuss this development and an appropriate agenda. She indicated that education research, solid education research, is the key issue they want to address. That certainly fits with what I have heard at this conference so far, including from Bruce Alberts this morning.

4. Involving Prospective and Current K-12 Teachers in Research Experiences at AAU Universities

In March 2002, AAU released a document entitled "Involving Prospective and Current K-12 Teachers in Research Experiences at AAU Universities." This document was the result of discussions between the National Science Foundation and AAU's Task Force on K-16 Education. The document was distributed to all AAU Provosts and Senior Research Officers and can be found on the AAU website. In brief, it recognizes that many of today's innovative models for preparing teachers, especially at research universities, call for building *partnerships* between teacher education programs and the colleges of arts and sciences, university research labs, local schools, and businesses.

The document includes a recommendation that each AAU university should have individuals on campus who are aware of current opportunities and who can help faculty members wishing to initiate research experiences for teachers and prospective teachers. Such programs offer an important way to improve the K-12 preparation of all students,

including those who will enter AAU universities in the future. Although this particular document was focused on research experiences for prospective and current teachers, AAU certainly recognizes the value research experiences have for other students as well.

4. Carolyn Merkel's Report on Undergraduate Research

That brings me back to where I began earlier. As I mentioned earlier, Carolyn reviewed undergraduate research at six AAU universities on behalf of AAU. These included the California Institute of Technology, Emory, Massachusetts Institute of Technology, Rutgers, the University of Illinois at Urbana-Champaign, and the University of Washington. Two of the universities have provided research opportunities for undergraduates for decades, but one has only begun to address the issue within the last few years. Carolyn found that, while universities generally have become more supportive of such experiences, these programs are still limited.

One of the critical issues is how we can go from the kind of impressive initiatives that you and your colleagues have undertaken – demonstrating both creativity and energy – to sustained systemic change!

The report made two recommendations.

- First, AAU universities should continue conversations already begun on their campuses about expanding research opportunities for undergraduates.
- Second, AAU should encourage federal agencies to enhance or improve undergraduate research programs.

The latter we are continuing to do as part of our lobbying efforts. The former you are helping us do here today.

6. Introduction of Carolyn Merkel

I'm pleased now to introduce to you Carolyn Merkel, Director, Student-Faculty Programs, California Institute of Technology. Carolyn has been involved in undergraduate research program activities at CalTech for more than two decades. Among her activities have been:

The Summer Undergraduate Research Fellowships program at CalTech – since 1979, and as director since 1989.

More than 300 students from CalTech and from colleges and universities worldwide now participate in this program – at CalTech, at the Jet Propulsion Laboratory, or at other colleges and universities in the US and abroad. 54% of the June 1999 graduating class at CalTech – my latest figure – had participated in this program! Her office at CalTech has become the focal point for programs in which students and faculty work together around projects of mutual interest.

Carolyn has also been very active outside CalTech in organizations related to undergraduate research:

- She was a founder of the Southern California Conference on Undergraduate Research;
- served on the Board of Governors of the National conference on Undergraduate Research; and
- is a member of the Council on Undergraduate Research.

Carolyn has received a number of awards for her contributions – and maybe the one she appreciates the most is the "Carolyn Merkel Summer Undergraduate Research Fellowship Endowment," established in 1998! She has her BA from Mount Saint Mary's College in Los Angeles.

It gives me great pleasure to introduce to you a person who has devoted her professional life to what this conference today is all about – making sure that undergraduates enjoy the full benefits of what a research university can offer!

Carolyn Merkel, a worker in the vineyard!