

## Outline for Remarks

September 5, 2007

Engineer of the Future Workshop

Good morning.

I am Ilesanmi Adesida, dean of the College of Engineering at the University of Illinois.

It is my pleasure to welcome you to “A Workshop on the Engineer of the Future.”

This is the first event on the calendar of the Engineering, Technology, and Culture Lecture Series for this academic year.

If I may quote an aspect of the intellectual rationale of this series, it says, “The study of engineering and technology from the philosophical, historical, cultural, behavioral, and sociological perspectives is essential to address important contemporary problems at the interface of technology and society.”

This is a forum where engineers meet with philosophers, sociologists, and others to deliberate on the future. Our subject today is indeed about the future.

I want to thank the sponsors of the Lecture Series and this workshop; they include many units in the College of Engineering, as well as many units from across the campus such as:

- the Center for Advanced Study
- the Center for Global Studies
- the Graduate School of Library and Information Science
- the Illinois Program for Research in the Humanities
- the Institute of Aviation Human Factors Division
- the Institute of Labor and Industrial Relations
- the National Center for Supercomputing Applications

and the John Deere & Company, a company that is about the future.

I would also like to thank two professors in the College of Engineering who have been the driving force behind the Lecture Series and this Workshop—they are Professor Michael Loui of the Department of Electrical and Computer Engineering and Professor David Goldberg of the Department of Industrial and Enterprise Systems Engineering. Thank you.

Now, I especially want to welcome and thank our guests today:

**Provost Linda Katehi**, who is also vice chancellor for academic affairs, will make some remarks. Dr. Katehi holds numerous national and international distinctions for research and education.

**Dr. William A. Wulf**, former president of the National Academy of Engineering, is no stranger to this campus, although the campus has changed since he was here in the 1960s.

Dr. Wulf earned his bachelor's degree in Engineering Physics and a master's degree in Electrical Engineering from the University of Illinois, and his career exemplifies what we hope for all of our students: leadership.

Also with us today is **Sherra E. Kerns**, vice president for Innovation and Research at Olin College, and past president of the American Society for Engineering Education.

Dr. Wulf's experience with the National Academy of Engineering and Dr. Kern's experience with the American Society for Engineering Education uniquely position them to offer insight on today's topic: "Engineer of the future."

We are here today because we recognize that while we have been extraordinarily successful at educating students to become the best engineers in the world, we must continually adapt.

For an engineering college of our caliber—a *preeminent* engineering college—it is not enough to keep pace—we must set the pace.

Ladies and gentlemen, we have taken this to heart. This ambition is reflected in our new strategic plan, a plan that has as one of its prime goals to take the lead in the transformation of undergraduate engineering education in the 21<sup>st</sup> century.

In preparation for this workshop, I re-read the National Academy of Engineering report “The Engineer of 2020—Visions of Engineering in the New Century.” We should note that our guests (Dr. Wulf and Dr. Kerns) today were on the front line in bringing this report to life!

This report examines not just the aspirations of the engineer of 2020, but also the attributes of future engineers.

As we discuss the future, some key phrases from the report are going to come up again and again:

- rapid pace of technological innovation and change
- globally interconnected world
- diverse, multidisciplinary workforce
- social, cultural, political, and economic forces

and

- seamless, transparent technology in everyday lives.

In addition, we will consider the attributes of future engineers, which the report summarized as:

- strong analytical skills
- practical ingenuity
- creativity

- communication
- business and management skills
- leadership skills
- high ethical standards

and

- professionalism.

We are familiar with those attributes—they are at the core of our curriculum goals—but “The Engineer of 2020” suggests an additional set of attributes.

Given the rapid pace of technology, the globally interconnected world, and the diverse workforce, future engineers must also be:

- dynamic, agile, resilient, and flexible,
- and they must be lifelong learners.

Illinois has one of the best colleges of engineering in the country—the programs are consistently top ranked.

We have excellent faculty, excellent research programs, and a strong science-based undergraduate curriculum.

We want to motivate and attract the very best students from all population groups—diverse in outlook, diverse in interests—and we want them to succeed once they are here.

But engineering at Illinois has a well-earned reputation as one of the most challenging programs on campus and indeed in the nation—and this makes it even more important that we offer the appropriate support and structure for all of our students to be successful.

- The Physics 100 course is an example of how curriculum change can positively impact retention. This course prepares students who are capable, but are also at risk of

failing because of a lack of fundamental background knowledge.

- The Women in Engineering and Morrill Engineering programs, which provide a supportive community, are examples of ways we can enrich the student experience.
- Engineering Council, Engineers without Borders, the Technology Entrepreneur Center, the Engineering Student Projects Laboratory, and senior design courses are organized to help students to explore their interests—from problem solving, to innovation, to service.

These examples show that this college is already engaged in thinking about “the engineer of the future.”

But I will say again: We want to motivate and attract the best students, and we want them to succeed once they are here AND after they graduate.

These are critically important goals for the future of engineering and the future of this college.

What must we do to ensure that our students:

- are prepared to be future leaders;
- are excited about engineering, supported in their efforts, and feel positive about their experience at Illinois;
- are not just creative and productive, but also generate new ideas that have *impact*?

And finally, how can we help our students

- recognize that they have a social responsibility at a global scale?

I look forward to hearing ideas on how we can meet these challenges from our guests, the panel, and everyone participating today.

Thank you for coming.

Reference

Engineer of 2020 website:

<http://www.nae.edu/nae/engeducom.nsf/weblinks/MCAA-5L3MNK?OpenDocument>