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### ENGINEERING AT ILLINOIS

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# Message from the Dean

## Collaborating on Essential Solutions

**T**he challenges that we will face over the next four decades will be unlike any that we have seen before.

According to the most recent report by the United Nations Population Division, nearly 10 billion people will inhabit our planet by the year 2050—10 billion people who will compete for limited resources in an interconnected world where even the most local crises will have the potential for far-reaching consequences.

We have already begun to see hints of what the future will bring. The present need to develop cleaner and more efficient transportation systems in the face of constrained energy supplies and mounting environmental pressures; the struggle to contain rising health-care costs at home while improving medical care in the developing world; and the growing importance of information security in both the private and public spheres all foreshadow the kinds of broad, complex challenges that lie ahead.



singular breadth of our technical expertise and our uniquely collaborative culture to address issues that are of both national and global significance.

Our college is home to representatives from every conceivable engineering discipline, all of them willing to share their unique perspectives in search of innovative solutions. Yet we are able to extend our reach even farther by seeking out the expertise of colleagues from across campus and by forging powerful alliances with other institutions. Recent endeavors include the Strategic Health Care Information Technology Advanced Research Projects on Security (SHARPS) Center for Health Information Privacy and Security, an Illinois-led multi-university consortium dedicated to developing robust and trustworthy health-care information systems; and the Midwest Cancer Nanotechnology Training Center (M-CNTC), an NIH-supported initiative to create a regional

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hub with partners such as Mayo Clinic and the University of Illinois at Chicago that will train a new generation of leaders in the interdisciplinary field of cancer nanotechnology.

Whether we are working with doctors to analyze operating-room data and optimize health-care delivery; collaborating with economists to invent rigorous quantitative methods for predicting the economic impact of shifting transportation patterns; or drawing on the expertise of multiple engineering disciplines to develop secure systems for energy, defense, and homeland security, we know that an interdisciplinary approach is essential to solving the complex problems that will directly affect living standards across the globe. We intend to use the full range of talent and resources at our disposal to provide solutions that will directly improve the human condition both at home and abroad.

That is what we at Illinois have always done. And it is what we will continue to do in the years to come.

A handwritten signature in black ink that reads "Ilesanmi Adesida".

**Ilesanmi Adesida**  
*Dean and Willett Professor*

In the Fall 2010 issue of this magazine, we explored the ways in which Engineering at Illinois is working to ensure adequate supplies of critical resources such as water, energy, and food. In this issue, we explore efforts to tackle the vitally important areas of health care, transportation, and security—areas that must be addressed if we are to ensure the stability, prosperity, and well-being of the global community in the decades to come.

Engineering at Illinois is committed to meeting these challenges. For 140 years, our faculty and students have led the effort to meet the most pressing needs of society through cutting-edge science and technology. The techniques and talents that we bring to this mission will only become more essential as the world grows more crowded and complex. So, too, will our dedication to producing graduates with the technical excellence, the adaptability, and the overarching vision to invent the tools and paradigms we will need to confront tomorrow's problems.

As engineers, we excel at problem solving. Yet the problems that loom before us are so large and so multifaceted, their potential societal impact so great, that we cannot solve them alone. That is why Engineering at Illinois is focused on harnessing both the