

## Industrial Performance Center

The [Industrial Performance Center](#) (IPC) is dedicated to the study of innovation, productivity, and competitiveness in the US and around the world. The center specializes in bringing together multidisciplinary teams of researchers in engineering, science, management, and the social sciences to carry out innovative, applied research on industrial growth and transformation, national and regional economic growth and competitiveness, and innovation performance. The IPC seeks to help leaders in business, government, education, and other sectors of society better understand global industrial developments and create practical new approaches for strengthening public policies, business strategies, technical practices, and educational programs. Our interdisciplinary teams observe, analyze, debate, and report on strategic, technological, and organizational developments in a broad range of industries, and examine the implications for society and the global economy. The Industrial Performance Center often convenes key actors from the public, private, and nonprofit sectors to discuss the challenges and opportunities facing firms, industries, regions, and countries in an increasingly dynamic, competitive, and global economy.

### Research Highlights

The center's research is organized around five major themes: innovation in the energy industries, production in the innovation economy, regional innovation systems, new concepts and frameworks for managing innovation, and globalization and global value chains. The following provides research highlights from academic year 2011–2012.

#### Energy Innovation

The Industrial Performance Center completed its multi-year Energy Innovation Project (EIP), supported by a major grant from the Doris Duke Charitable Foundation. The goal of EIP was to carry out a comprehensive assessment of the strengths and weaknesses of the energy technology innovation system in the United States, considering the entire complex of incentives, regulations, markets, and public and private institutions within which the development, demonstration, adoption, and diffusion of new energy technologies takes place. Work this past year focused primarily on the completion, publication, and dissemination of the book by professors Richard Lester and David Hart, *Unlocking Energy Innovation: How America Can Build a Low-cost, Low-carbon Energy System*. The book provides an overview of the issues facing the US in developing a low-carbon energy system and a set of recommendations for improvements to federal and regional research, development, and demonstration policies, as well as mechanisms for early adoption and large-scale deployment of supply- and demand-side innovations. Several seminars and workshops were conducted throughout the country on the book's findings.

#### Production in the Innovation Economy

The IPC continued its work as part of the MIT initiative [Production in the Innovation Economy](#) (PIE), which seeks to analyze the relationship between innovation and production in the United States and to propose ways in which the US might capture more of the downstream benefits of its innovative capacity. PIE is an Institute-wide

effort, modeled on the successful Made in America project of 20 years ago, which led to the creation of our center. The project brings together MIT faculty from a variety of disciplines—economics, engineering, political science, management, biology, and others—to examine US manufacturing in the 21st century. IPC heads up one of the central research modules that examine how innovative companies scale from prototypes to pilot production to large-scale commercial production in order to understand what factors influence how and where firms scale production. Professor Suzanne Berger, an IPC affiliate, is co-chairing the initiative with Institute Professor Phillip Sharp.

### **Regional Innovation**

The Industrial Performance Center continued to work in a variety of ways on topics related to regional innovation systems. The center hosted two meetings of the Massachusetts Biomanufacturing Roundtable to discuss emerging technologies and products and ways in which the region could work collaboratively to be a global leader in fields such as cell therapies and combination products. The IPC also helped with MIT's hosting of the Northeast regional meeting of the Advanced Manufacturing Partnership, the Obama administration's industry/academic initiative around advanced manufacturing in the US. IPC hosted visitors from Brazil, Malaysia, Norway, and Puerto Rico to discuss regional innovation systems and the Massachusetts model, and possible partnerships in the future.

### **New Concepts and Frameworks for Managing Innovation**

In June 2012, IPC was awarded a grant from the National Science Foundation's Science of Science and Innovation Policy division for the project Managing Community: The Organization and Management of Federal Research Funding Agencies. The team, led by professor Michael Piore and including IPC executive director Elisabeth Reynolds and Sloan School of Management PhD student Phech Colatat, will study the organization and management of three federal agencies—the Defense Advanced Research Projects Agency, the National Institutes of Health, and the National Science Foundation—that fund scientific and engineering research to identify the key differences among these agencies and their impact upon research outcomes and the behavior of the scientific community.

### **People**

The center hosted two visiting scholars in AY2012. Liang Zhang is an associate professor at the China Institute for Science and Technology at Tsinghua University and works on intellectual property issues in China. Benjamin Temkin is a professor at the Latin American School of Social Sciences in Mexico City. Professor Temkin's work focuses on the informal economy as well as the Mexican political economy.

Ashley Finan completed her PhD in spring 2012 and will be at IPC for her postdoctoral research in the Department of Nuclear Science and Engineering.

**Elisabeth Reynolds**  
Executive Director