

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 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 IPC often convenes key actors from the public, private, and non-profit 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 currently organized around four major themes: systems of innovation, energy innovation, production in the innovation economy, and globalization. The following provides research highlights from the 2013–2014 year.

Systems of Innovation

In June of 2014, the IPC finalized an agreement with Serviço Nacional de Aprendizagem Industrial (SENAI), the Brazilian national service for industrial training, to launch a major five-year research project on building innovation capacity in Brazil, focusing on the creation of 25 SENAI Institutes for Innovation. This project continues the IPC's research on regional innovation, and for the first time will entail the study of innovation systems and processes in emerging economies. The project involves IPC executive director Dr. Elisabeth Reynolds and professors Richard Lester, Michael Piore, Ben Ross Schneider, and Susan Silbey. There will also be research collaborations with academic, governmental, and industrial organizations in Brazil.

In fall 2013, Professor Lester, Dr. Reynolds, and professor Charles Sodini launched a new study of the scaling challenges facing innovative, entrepreneurial companies. The project builds on earlier research conducted as part of the Production in the Innovation Economy project, and focuses on the scale-up of Massachusetts companies across a broad range of industries.

Professor Piore continued his research, "Managing Community: The Organization and Management of Federal Research Funding Agencies," sponsored by the National Science Foundation's Science of Science and Innovation Policy division. The project involves a comparative study of the organization and management of three Federal research agencies (Defense Advanced Research Projects Agency, National Institutes of Health, and National Science Foundation), and the impact of these practices on research outcomes and the behavior of the scientific community.

Energy Innovation

The IPC completed a nationwide series of regional roundtables in conjunction with Advanced Energy Economy, a business-led non-profit that promotes the adoption of clean energy technologies. The roundtables brought leaders of electric utilities, advanced energy businesses, and regulatory agencies together to explore the obstacles to accelerated innovation in the US electric power sector and how to overcome them. This project was an outgrowth of the IPC's multi-year Energy Innovation Project.

Production in the Innovation Economy

During the past year, the IPC contributed to the launch of the [Production in the Innovation Economy](#) (PIE) project, which analyzes the relationship between innovation and production in the United States and proposed ways in which the US might capture more of the downstream benefits of its innovative capacity. Based on the research conducted as part of the PIE project, the IPC convened a workshop, "Growing Innovative Companies to Scale," which brought CEOs, investors, and policymakers together to discuss the challenges of finding financing and capabilities in the US for scaling entrepreneurial companies requiring production capabilities.

As follow-on to the PIE research, the IPC has launched a new research project, Building Innovative Capacity Among Massachusetts Manufacturers: Pathways and Opportunities for SME. This research, sponsored by the Massachusetts Development Corporation, is focused on how to increase innovative capabilities among the state's small and medium-sized advanced manufacturing companies and strengthen the industrial innovation ecosystem.

Globalization

Senior research affiliate Tim Sturgeon and professor Clair Brown of UC Berkeley completed their multi-year study on US industry and outsourcing: The 2010 National Organizations Survey: Examining the Relationships Between Job Quality and the Domestic and International Sourcing of Business Functions by United States Organizations. Using a representative cross-section of US organizations, the study assessed the prevalence of outsourcing and offshoring, and whether such activity tends to occur in the primary business functions of organizations or is related to other tasks.

Visiting Researchers

The IPC hosted the following four visiting researchers during the 2013–2014 academic year:

Yumiko Kamada is the deputy director of the Japan Railroad East Frontier Lab. Ms. Kamada joined the IPC in February of 2014 for a year to conduct research on regional economic development strategies in Japan related specifically to building agro-tourism clusters in the country.

Professor Celson Pantoja Lima is visiting the IPC from the Federal University of Western Pará in Brazil, where he headed the Institute of Engineering and Geosciences. Professor Lima's research focuses on supply chains and regional ecosystems.

Dr. Yilmaz Uygun is visiting the IPC from the Dortmund University of Technology and the Fraunhofer Institute for Material Flow and Logistics in Germany. His research while at the IPC is focused on building innovative capacity among small and medium-sized manufacturers and developing agent-based models to understand innovation ecosystems for advanced manufacturing companies.

Huadong Zhou is a research fellow at the Institute of Science and Technology Systems and Management within the Chinese Academy of Science and Technology for Development, a division of the Ministry of Science and Technology. At the IPC, Zhou conducted research on models of collaborative research and development (R&D) centers in the US to compare and contrast with the emergence of nearly 1,000 newly established Industrial Research Centers that have arisen in the eastern provinces of China over the past several decades.

Other

After over 15 years in the same offices on the first floor of E-38, the Industrial Performance Center moved up to the fifth floor and into a new and expanded space.

Elisabeth Reynolds
Executive Director