SUS-RURI: Proceedings of a Workshop on Developing a Convergence Sustainable Urban Systems Agenda for Redesigning the Urban-Rural Interface along the Mississippi River Watershed held in Ames, Iowa, August 12-13, 2019

Introduction

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Iowa State University is honored to have hosted the conference on Developing a Convergence Sustainable Urban System Agenda for Redesigning the Urban-Rural Interface Along the Mississippi River Watershed. Our thanks go to the National Science Foundation (NSF) Computer and Network Systems program and NSF Senior Advisor Megan Houghton for enabling Iowa State to convene a wide range of stakeholders to this critically important workshop, and we are proud to be one of 27 groups facilitating these conversations in 2019 through conferences and workshops funded by the NSF.

The Iowa State team that organized this workshop—Professors Ulrike Passe, Kimberly Zarecor and Jan Thompson—has been leading urban sustainability studies on campus for a number of years. For example, team members recently championed a Presidential Interdisciplinary Research Initiative for Data-Driven Discovery project to develop approaches to foster collaborative resident community decisions that minimize building energy costs. In addition, they led a planning grant from the NSF Smart and Connected Communities program to study small rural communities and how maintain quality of life as they shrink in population size – or shrink smart. At a time when this type of work is predominantly led by STEM researchers, I am proud to see representatives from Iowa State’s College of Design and the entire arts and humanities community leading these conversations and addressing sustainable urban systems challenges through convergence-style teams.

This workshop reflects the continued commitment of Iowa State faculty to purposeful research, whether foundational—creating the building blocks that advance understanding and provide a vehicle for further exploration—or translational, leading directly to new innovations, systems, or technologies that benefit society. The purpose that drives most research at Iowa State is defined by five grand societal challenge themes that make up a core component of the university’s strategic plan for research:

- Promoting healthy lives for people, animals, plants, and communities
- Building sustainable human and natural ecosystems
- Designing next-generation materials and manufacturing technologies
- Enabling data-driven discovery and secure cyber systems
- Developing global citizens

It probably comes as no surprise that in many instances, research projects support more than just one of these grand challenge themes. This is certainly the case for this workshop, especially when you consider the importance of physical infrastructure and

spatial planning in the long-term sustainability of cities, particularly cities where economic changes have left urban infrastructure systems underused and poorly maintained.

The collaboration and work that occurred during and following the workshop is aimed contribute to healthier lives, communities and ecosystems, and more sustainably-built and natural resource systems. We are inspired by the diversity of workshop participants, from data scientists and artists to architects and social scientists—and the proceedings demonstrate that everyone present is fully committed to the idea of using convergence to tackle critical societal challenges. The participants focused on the long-run in their discussions and ideation, and the event offered a starting point for continued conversations and future partnerships. We are hopeful that this event has served as the foundation for additional research networks and collaborative projects that bring academia, government, and industry together to explore the entire Mississippi River watershed system as an interconnected urban and ecological system.

We thank all of the contributors to the workshop proceedings and the participants who engaged in fruitful discussions for their continued engagement and passion for purposeful discovery to address sustainability for the Mississippi River watershed and its communities..

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