

## PURDUE SYSTEMS COLLABORATORY



**In our dynamic, technology-driven world,** we've found that our ability to create complex systems has far exceeded our capability to understand and manage them. Purdue Systems Collaboratory (PSC) was formed in 2015 to facilitate broad, transdisciplinary investigations of systems, their interactions with other diverse and assumed unrelated systems, and the aftereffects of major system disruptions. To date, we have developed several prototype multi-college projects, facilitated conversations about systems-related activities and interests with faculty across the University, and elicited enthusiastic support from all of Purdue's deans.

Through PSC, spearheaded by the College of Engineering, Purdue is taking a holistic perspective in addressing the human factor of systems, because understanding this is essential for addressing global as well as local issues. What's most important about PSC is that it drives home the concept of the convergence of knowledge — across

the physical sciences, social sciences, arts, life sciences — which sets us apart from other universities.

Consider pandemics. An effective response would include identifying the pathogen; developing timely, cost-effective treatments; anticipating human response; and developing effective policies. PSC's goal: To bring all these technical, human, and social dimensions together in order to improve the human condition and avoid potentially catastrophic outcomes.

Treating PSC as a startup operation, the collaboratory's leadership team has reached out to the Purdue community and friends worldwide in academia, industry, and government to enrich the ideas for this new entity — a non-center, non-institute, community-inclusive, responsive federation.

We have already identified more than 100 Purdue faculty, students, and staff who are interested in shaping and

collaborating in this new operation. Our next steps are to build local and global networks based on a diversity of topics, as well as related research and education themes, cross-cutting tools, and methodologies.

### HOW YOU CAN HELP

With guiding principles rooted in learning, discovery, and engagement, PSC seeks your support in helping us to:

- Create a network of cross-disciplinary systems courses, utilizing faculty and capabilities across all the colleges, with innovative teaching methods and technologies.
- Develop a flexible, transdisciplinary systems curriculum across all the learning pathways.
- Seek out and identify foundational principles using innovative methods applied to complex problems.
- Connect external stakeholders and researchers in innovative ways.
- Seek out and connect global academic, government, and industrial expertise.
- Inform the national/international agenda for systems research and education.

**Through *Ever True: The Campaign for Purdue University*,** you can join us in promoting the science of systems and systems thinking across all disciplines. ■



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