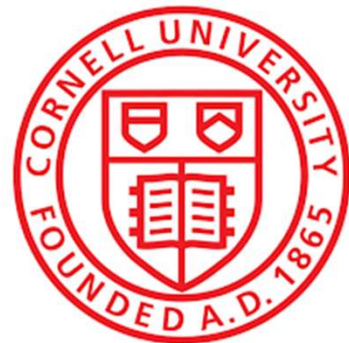Dr. Erika Palmer

Systems Engineering Program

Cornell University

Social Resilience in Complex Systems

CornellEngineering
Systems Engineering

◈ Senior Lecturer, Systems Engineering Program, Cornell University

◈ PhD in Systems Engineering and Social Policy

◈ Teaching

  ◇ Sociotechnical Systems and Policy

  ◇ Systemic Sustainability

  ◇ Social/Sociotechnical System Modeling and Simulation

◈ Research

  ◇ M&S of Social/Sociotechnical Systems in many different domains

    ◈ E.g., Circular Economy, Space Policy, Cybersecurity…

◈ Founding (now former) chair of the Social Systems Working Group

◈ Americas Leader for Empowering Women Leaders in Systems Engineering (EWLSE)

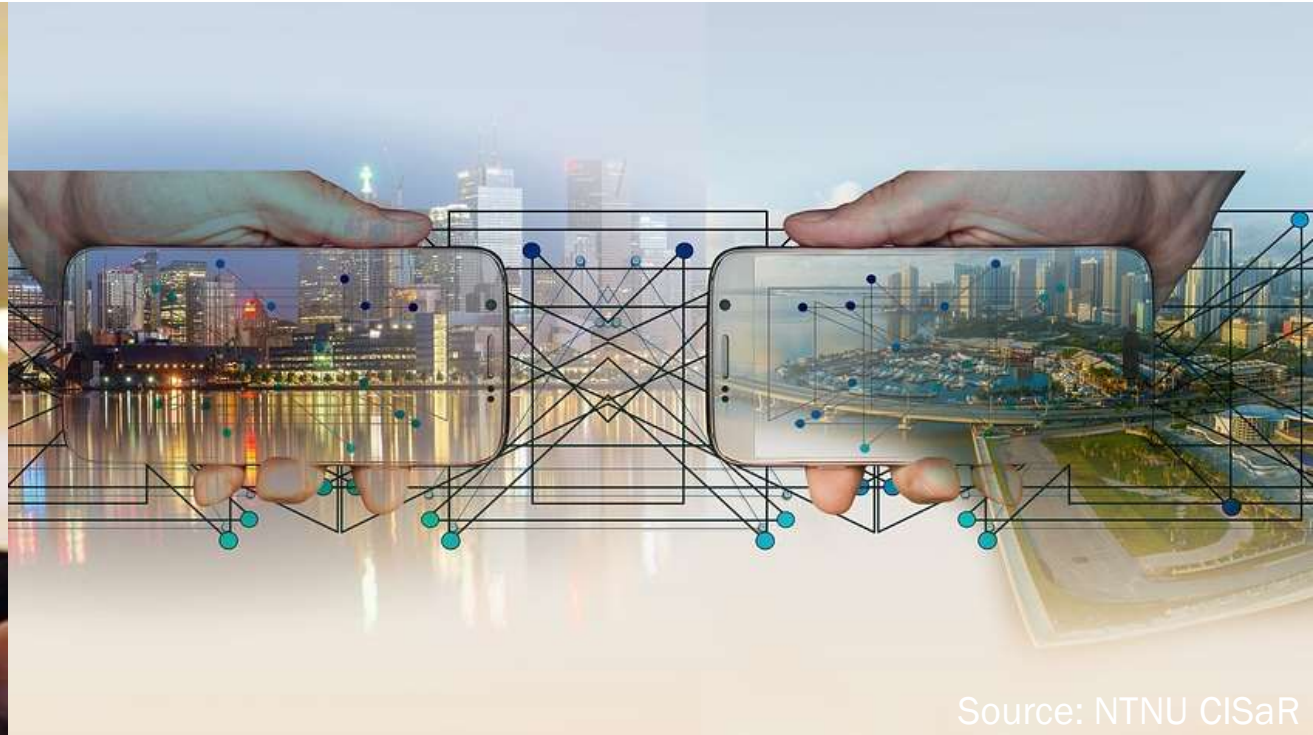◈ Corporate Advisory Board (CAB) rep for Cornell University

Social Systems

Beyond Users

- ⬦ Isn't this just users?
- ⬦ Isn't this just human system integration?
- ⬦ Isn't this just safety?
- ⬦ Isn't this just ergonomics?
- ⬦ Isn't this just operations research?

WARNING:

Reflections in this mirror may be distorted by socially constructed ideas of 'beauty'
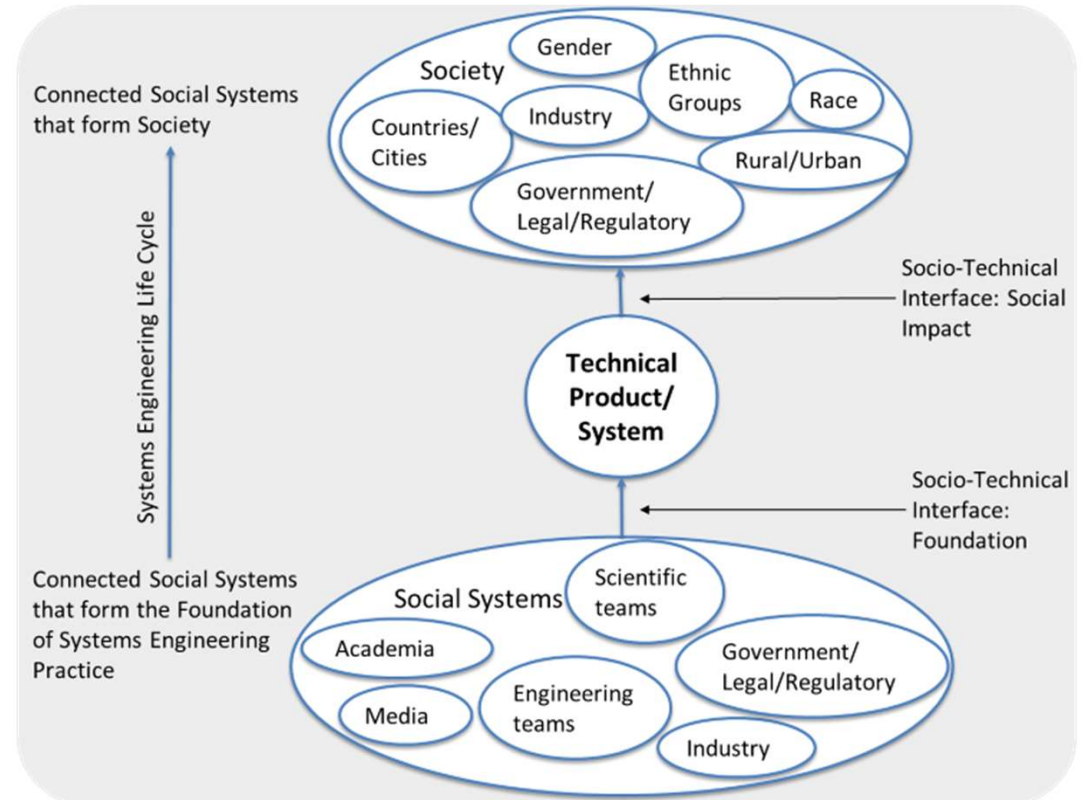
Source: NTNU CISaR
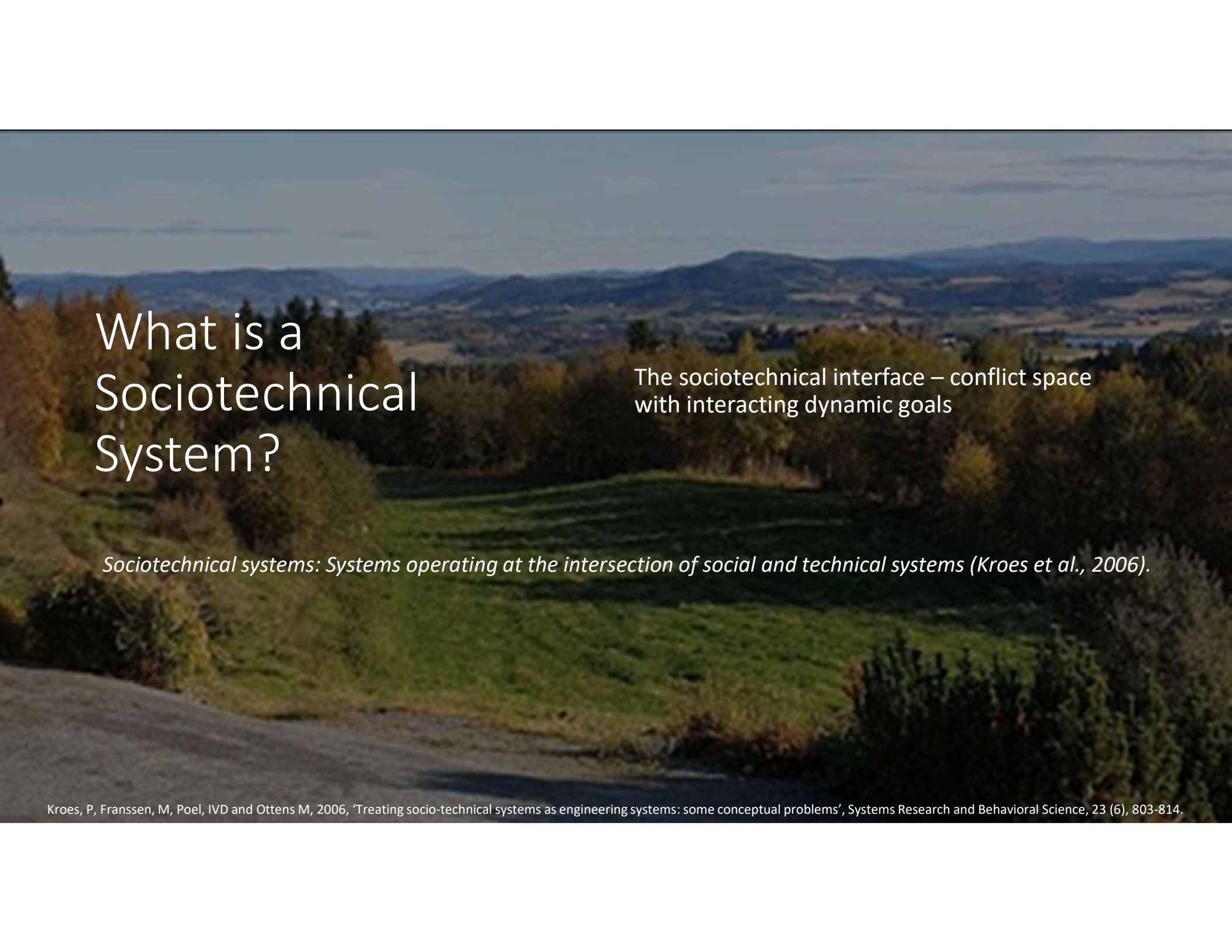
What is a Social System?

◇ Society is made up of many different types of social systems

◇ Law and Policy Systems

◇ Social Constructs

Sociotechnical Systems

Foundation and Integration/Impact

What is a Sociotechnical System?

The sociotechnical interface – conflict space with interacting dynamic goals

Sociotechnical systems: Systems operating at the intersection of social and technical systems (Kroes et al., 2006).

Kroes, P, Franssen, M, Poel, IVD and Ottens M, 2006, 'Treating socio-technical systems as engineering systems: some conceptual problems', Systems Research and Behavioral Science, 23 (6), 803-814.

Resilience as resistance
and adaptation

Social Resilience

MacLean (2014) uses theory from both the social and natural sciences and complex adaptive socio-ecological systems

Six attributes of Social Resilience:

1. Knowledge, Skills and Learning
   - E.g., Knowledge Partnerships
2. Community Networks
   - E.g., Social Capital
3. People-Place Connections
   - E.g., Stewardship
4. Community Infrastructure
   - E. g., Recreation Facilities
5. Diverse and innovative economy
   - E.g., Demands and interests
6. Engaged Governance
   - E. g., Living Labs

Norwegian Onshore Wind

Friluftsliv
The Norwegian love of the outdoors

Government drops state windmill plan

📅 October 17, 2019

🔗 SHARE f 🐦 ✉ ...

Prime Minister Erna Solberg's conservative coalition is scrapping a new national wind energy plan that identified specific areas as best-suited for windmills. It proved to be highly controversial, prompting Solberg to back down after massive criticism that huge wind turbines can ruin scenic wilderness and that local objections could be overruled.

"This was supposed to be a measure that would ease conflicts," Solberg told state broadcaster NRK, referring to the "national framework" for land-based wind energy proposed by the state energy directorate (NVE) last spring. "It hasn't been, given the response we've
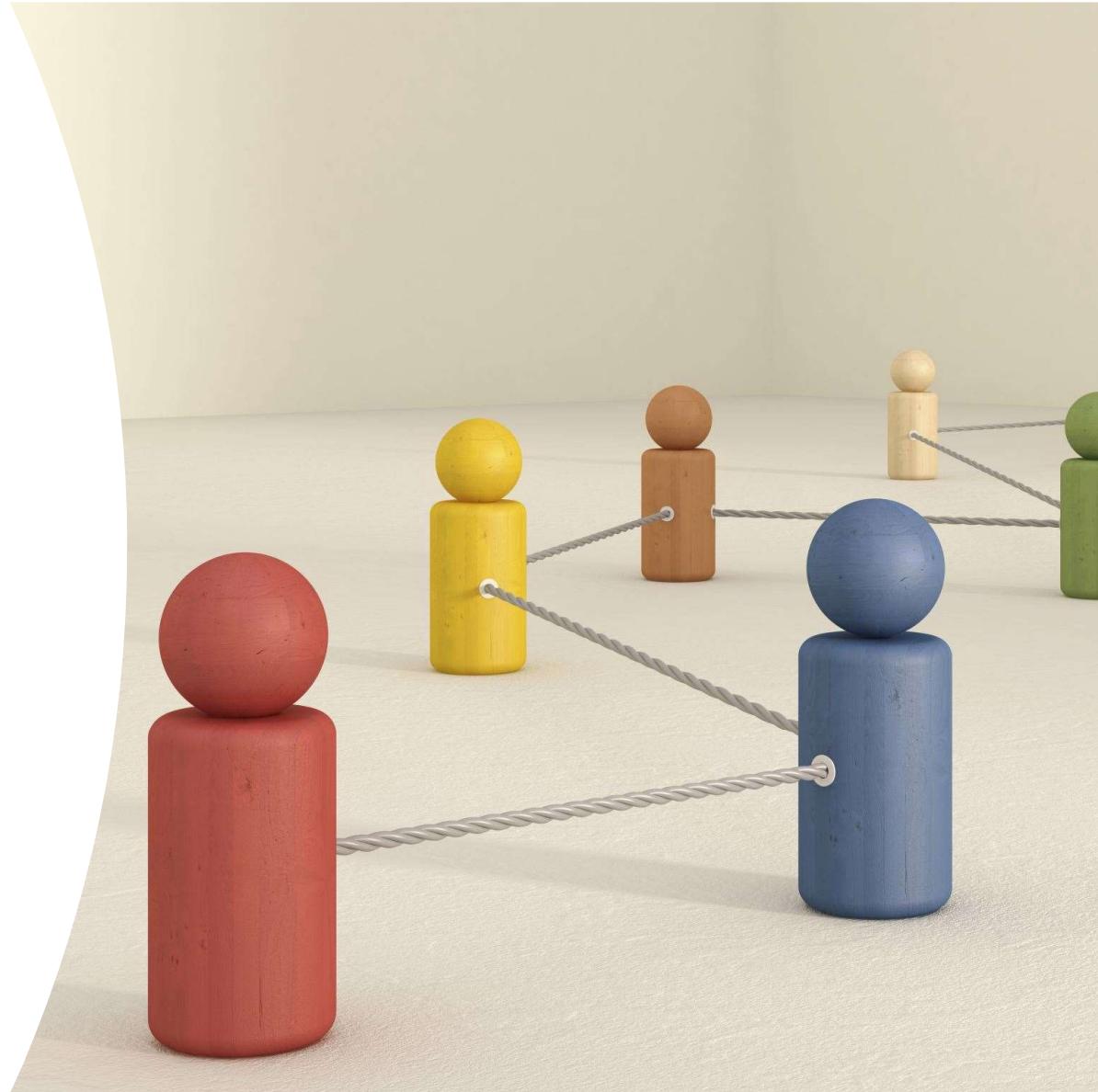
Knowledge Partnerships

Focused stakeholder relationships to absorb system shock

One person's solution is another person's problem

Social Capital

Interconnected Communities
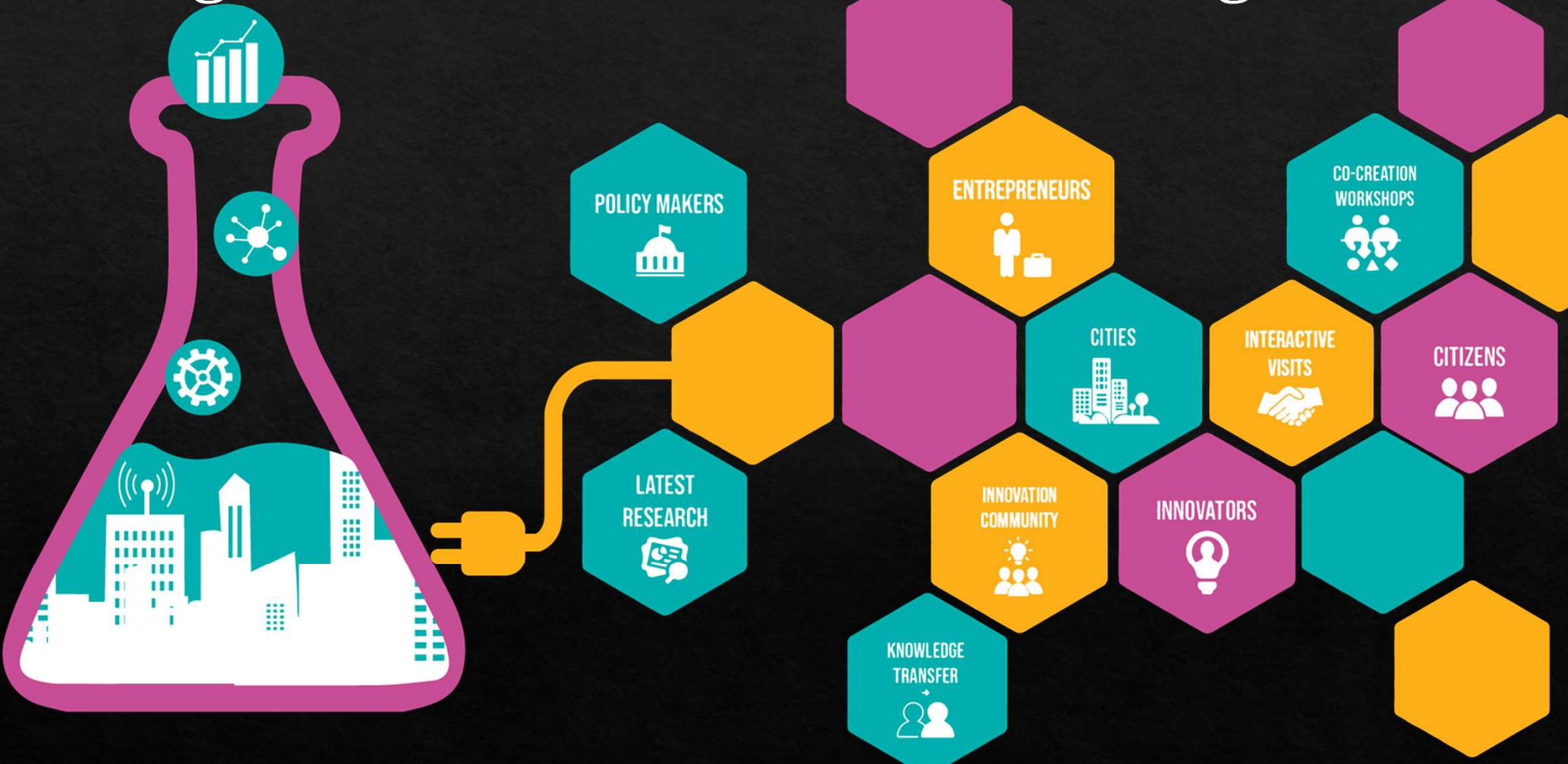
Stewardship

Recreation Facilities

Demands and Interest

Social Resilience and Systems Engineering

Living Labs: Co-Production of Knowledge

Questions?

Get in touch:
ekp48@cornell.edu