



IOER Forum

Science Dialogue

Resilience, Sustainability, and Circularity: A Collaborative Systems Approach

Prof. Dr. Joseph Fiksel

The Ohio State University, College of Engineering



Sustainability is important for the provision of food, water, energy and other urban needs. Moreover, in a hyper-connected and turbulent world, resilience is essential for both communities and businesses. Resilience is defined as the capacity to survive, adapt, and grow in the face of gradual stresses and sudden shocks. Sustainable and resilient communities are better prepared for disruptions and can adapt effectively to unforeseen challenges. It follows that urban development should adopt an integrated systems approach that involves both stakeholder collaboration and an understanding of the complex linkages among economic, environmental, and social systems. For example, circularity not only reduces waste burdens and resource demands, but also improves resilience by avoiding dependence upon scarce materials and remote supply chains. The speaker will describe a system dynamics approach, called Triple Value Simulation, that was implemented by US EPA in New England at a regional watershed level.

(Source photo: Prof. Dr. Joseph Fiksel, <https://engineering.osu.edu/people/fiksel.2>)

**Wednesday
14 July 2021
4:00 p.m.
CET**

**Virtual event –
online**

Zoom-Link:

<https://ioer-de.zoom.us/j/82352039151?pwd=TGtXYVJKQzdrbldTY0JGK1IHL3pKUT09>

Co-presentation

**Urban Environmental Acupuncture: An approach toward expanding
greenspace in dense European cities**

Dr. Jessica Hemingway
IOER Dresden

Moderation
Prof. Dr. W. Wende

Coordination
Dr. Andreas Otto

In dense cities where large areas of land are difficult to obtain and preserve as green space urban environmental acupuncture (UEA) may offer a potential solution. Micro-spaces such as, alleyways, facades, courtyards, roofs, or abandoned plots can benefit cities by contributing to biodiversity, climate change adaptation as well as recreational and respite opportunities for city dwellers. The

"SALUTE4CE" project funded by the European Union, Interreg Central Europe from 2019-2022 demonstrates the use of UEA with the implementation of 16 pilot projects in 4 countries. Behind the concept of UEA lies the idea of triggering major effects on the development of cities through small, targeted interventions in their structure. UEA may be seen as an approach toward improving the functional health of a city's urban metabolism. The problematic and positive aspects of the UEA approach will be presented.



Our speakers

Dr. Joseph Fiksel, Professor Emeritus at The Ohio State University (OSU), is a former management consultant and researcher whose publications and real-world projects have advanced both the science and practice of sustainability and resilience. He co-founded the Center for Resilience at OSU, and helped to establish the university-wide Sustainability Institute. Prior to joining OSU he was Vice President at Battelle, providing expertise to the World Business Council for Sustainable Development and many leading multi-national companies. From 2010 to 2014 he served as Special Assistant for Sustainability at the U.S. Environmental Protection Agency, working to embed systems thinking into the agency's programs. Joseph Fiksel holds a B.Sc. from M.I.T., a Ph.D. in Operations Research from Stanford University, and an advanced degree from La Sorbonne. Presently he is a Visiting Scholar at George Washington University's Environmental and Energy Management Institute.

Dr. Jessica Hemingway is a researcher at the IOER research area Landscape Change and Management. She studied City and Regional Planning at The Ohio State University (USA) (Master of Arts) and received her doctorate (Dr.-Ing.) from Technische Universität Dresden, Faculty of Environmental Sciences.

Next IOER Forum

8 September 2021, 2:00 p.m.
IOER Forum, Science Dialogue

**Prof. Dr.-Ing. Uwe Altrock, Universität Kassel,
Fachgebiet Stadterneuerung und Planungstheorie**

About the IOER Forum

The "IOER Forum" is a public platform for scientific dialogue and exchange with society. With this event series, the IOER highlights current topics in the field of sustainable development and transformation of cities and regions. We invite speakers from research (science dialogue), and from public administration, companies or civil society (science-policy dialogue). The lectures of our guests from Germany and abroad will be accompanied by short inputs from the research work of the IOER. The "IOER Forum" is open to all interested persons. Participation is free of charge, registration is not required.

<https://www.ioer.de/1/ioer-forum/>