University of Chicago—Tel Aviv University Workshop on Cities and Urbanism

City Center—Research Center for Cities and Urbanism, Tel Aviv University

April 7-9 2019

The 21st century started as the age of cities: for the first time in human history more than half of world population lives in cities and the process is still on. The implication is that every aspect of human life is becoming associated with urban life and the dynamic of cities. Understanding cities is thus a key to the understanding of society at large. The Mansueto Institute for Urban Innovation at the University of Chicago aims to face this challenging reality by bringing together “researchers … from the social, natural, and computational sciences, along with the humanities.” In a similar way the City Center—TAU Research Center for Cities and Urbanism attempts to face the age of cities by bringing “… together the many TAU researchers – faculty members, graduate and postgraduate researchers – who study various aspects of cities and urbanism.” A link between the many facets of cities, as well as between urban realities in different parts of the world thus seems to be essential at this stage. This is indeed the motivation behind the “The University of Chicago—Tel Aviv University Workshop on Cities and Urbanism”: to explore the potential of, and lay the foundations for, research collaboration between urban researchers at the two universities.

We consider this workshop as a first step toward such an exploration and collaboration. We focus on five major aspects of current urbanism: Social inequality, Justice and the city—a topic that stands at the center of urban studies since the middle of the 20th century; Complexity, scaling and the city—referring to the emergence in the last three decades of complexity theories of cities and the very recent allometric perspective on cities; Big-data, AoT, IoT and the city—a research domain that following the so-called “4th industrial revolution” might fundamentally alter the structure of our cities, the way we live and work in them, and the ways people in cities relate to one another; Cognition and the city—a new research domain that seeks insight for people’s behavior in the city from recent findings in cognitive and brain sciences; Migration and the city—an old-new urban process that today, in the age of globalization and smart technology, is already transforming the structure and nature of cities and societies around the world.
Sunday April 7, 2019  

**Gathering**

**Opening session: Overviews**
- 15.00-15.30 **Luis Bettencourt**: Scaling cities
- 15.30-16.00 **Charlie Catlett**: Software-Defined Sensors and Virtual Sensing Instruments
- 16.00-16.30 **Juval Portugali**: Snow’s Pendulum and the City

16.30-17.00 **Break**

**Complexity, scaling and the city | Chair: Ronit Purian**
- 17.00-17.30 **Luis Bettencourt**: Urban allometry
- 17.30-18.00 **Shlomo Havlin**: Resilience of interdependent urban infrastructures
- 18.00-18.30 **David Burg, Nir Kaplan & Itzhak Omer**: Scaling of cities in Israel?
- 18.30-19.00 **Hermann Haken, Guy Moshe, Juval Portugali**: The cognitive dimension of urban allometry

20.30 **Dinner**

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Monday April 8, 2019  

**Morning: Sackler Faculty of Medicine, room 100**

08.30-09.00 **Gathering**

**Greetings**
- 09.00-09.30 Prof. Joseph Klefter, President of Tel Aviv University

**Social inequality, justice and the city | Chair: Tovi Fenster**
- 09.30-10.00 **Kate Cagney**: Activity space, neighborhood context and health in later life
- 10.00-10.30 **Michal Tzur**: Effective and equitable logistics
- 10.30-11.00 **Talia Margalit**: Israeli planning in the media: New discourse, old borders
- 11.00-11.30 **Ronit Purian, Nir Kaplan & Itzhak Omer**: The spatial shape of social segregation – Everything is related but near things are more separated

11.30-12.00 **Break**

**Big data, AoT, IoT and the city | Chair: Irad Ben-Gal**
- 12.00-12.30 **Charlie Catlett**: Using computation and new sources of data to understand cities
- 12.30-13.00 **Itzhak Benenson**: Public transport in a Smart City: Are commuters endangered species?
- 13.00-13.30 **Efrat Blumenfeld-Lieberthal, Nimrod Serok, Orr Levy & Shlomo Havlin**: Unveiling the inter-relations between the urban streets network and its dynamic traffic flows
- 13.30-14.00 **Tal Raviv**: New trends in city logistic – small parcel delivery

14.00-15.00 **Lunch**
**Cognition and the city | Chair: Matti Mintz**

15.00-15.30 **Marc Berman & Kate Schertz:** Psychological-neural processing and the urban environment
15.30-16.00 **David Eilam:** Animals, humans, homes, and cities
16.00-16.30 **Adva Sahar, Itzhak Omer & Juval Portugali:** Body movement and urban spatial knowledge acquisition
16.30-17.00 **Asaf Degani, Ronit Purian & Yael Shmueli:** Automatic vehicles and pedestrians in the public space: Purpose, policies, and some design considerations

17.00-17.30 Break

**Migration and the city | Chair: Noah Lewin-Epstein**

17.30-18.00 **Daniel Zuend:** From population dynamics to Zipf's law
18.00-18.30 **Gilles Benguigui:** Migration and networks
18.30-19.00 **Miri Yemini:** Mobile nationalism: Mobility, parenting and belonging
19.00-19.30 **Yossi Harpaz:** Citizenship 2.0: Dual nationality as a global asset

**Concluding notes**

19.30-19.40 **Luis Bettencourt.**
19.40-19.50 **Charlie Catlett**
19.50-20.00 **Juval Portugali**

**Monday April 9, 2019**

**Trip**

**The roots of urbanization**

**Tel Megiddo** – early urbanization;
**Shorashim** – Alexander’s design;
and more
Participants

From The University of Chicago

Dr. Charles E. Catlett, Senior Computer Scientist at Argonne National Laboratory, Senior Fellow at the Computation Institute of the University of Chicago and Argonne National Laboratory

Professor Luis Bettencourt, Pritzker Director at the Mansueto Institute for Urban Innovation, Professor of Evolution and Ecology, the University of Chicago

Professor Kate Cagney, Dept. of Sociology, Director, Population Research Center, NORC & University of Chicago. Social inequality: https://sociology.uchicago.edu/directory/kathleen-cagney

Assistant Professor Marc Berman, Dept. of Psychology, University of Chicago. Cognition: https://psychology.uchicago.edu/directory/marc-g-berman

Dr. Daniel Zuend, Postdoctoral Fellow, Mansueto Institute for Urban Innovation, Scholar of Evolution and Ecology, University of Chicago. Migration: https://miurban.uchicago.edu/our-people

From Tel Aviv University (partial list)

Prof. Juval Portugali. Department of Geography and the Human Environment. Head of the City Center — Tel Aviv University Research Center for Cities and Urbanism. Research: Complexity and self-organization theories, environmental-spatial cognition, urban dynamics and planning in modern and ancient periods. https://en-urban.tau.ac.il/Prof-Juval-Portugali

Dr. Talia Margalit. Senior lecturer at the David Azrieli School of Architecture, Tel Aviv University and architect specialized in urban design, urban planning and urban history. https://www.tau.ac.il/profile/taliamar

Prof. Michal Tzur. Faculty of Engineering. Research: Humanitarian Logistics, Vehicle Sharing Systems, Supply Chain Management, Inventory Management, Transportation Systems, Transshipments. She is co-heading the transportation and logistics lab in the faculty of engineering. https://en-engineering.tau.ac.il/profile/tzurm

Prof. Itzhak Omer. Head of the Urban Space Analysis Laboratory, Dept. of Geography and Human Environment. Research: urban modeling, spatial behavior and spatial cognition, urban morphology, movement, urban complexity and social geography of the city. https://en-urban.tau.ac.il/story/Itzhak-Omer

Prof. Itzhak Benenson. Head of the Geosimulation and Spatial Analysis Laboratory, Dept. of Geography and Human Environment. Research: Geosimulation, spatial analysis; modeling urban dynamics; spatial big data analysis; urban mobility. https://en-urban.tau.ac.il/Itzhak-Benenson
Dr. David Burg. City model research – Shamir Research Institute, University of Haifa. 
Research: Mathematical modeling of dynamical complex social systems, diffusion and spatial analysis, advanced data methodology. https://sri.haifa.ac.il

Dr. Efrat Blumenfeld-Lieberthal. Head of the David Azrieli School of Architecture at the Tel Aviv University. Research: Theories of complexity in urban environments; urban morphology; size distribution of entities in complex systems; and complex networks in urban systems. https://en-urban.tau.ac.il/Efrat-Blumenfeld

Dr. Tal Raviv. Dept. of Industrial Engineering, head the Shlomo Shmeltzer institute for smart transportation. Research: transportation and logistics with a focus on smart transportation and sustainable logistics, and he is co-heading the transportation and logistics lab in the faculty of engineering. https://en-urban.tau.ac.il/Tal-Raviv

Prof. David Eilam. Dept. of Zoology, faculty of Life Sciences. Research: behavior of animals and humans, based on videotaping behavior in various contexts ranging from animals learning unfamiliar environments or confronting a predator, to humans performing sport or ethnic rituals. https://en-lifesci.tau.ac.il/profile/eilam


Dr. Ronit Purian. TAU City Center's Director. Research: Behavioral and social aspects of data and technology management; information systems, data mining and regional planning. https://en-exact-sciences.tau.ac.il/profile/purianro; https://en-urban.tau.ac.il/Ronit-Purian