SOE 3: Award Session: Young Scientist Award for Socio- and Econophysics (YSA)

Time: Monday 15:00–17:00 Location: HSZ 03

Presentation of the Award to the Awardee

Prize Talk SOE 3.1 Mon 15:10 HSZ 03

Initial Progress on the Science of Science — •Dashun Wang — Northwestern University

The increasing availability of large-scale datasets that trace the entirety of the scientific enterprise, have created an unprecedented opportunity to explore scientific production and reward. Parallel developments in data science, network science, and artificial intelligence offer us powerful tools and techniques to make sense of these millions of data points. Together, they tell a complex yet insightful story about how scientific careers unfold, how collaborations contribute to discovery, and how scientific progress emerges through a combination of multiple interconnected factors. These opportunities–and challenges that come with them–have fueled the emergence of a multidisciplinary community of scientists that are united by their goals of understanding science and innovation. These practitioners of the science of science use the scientific methods to study themselves, examine projects that work as well as those that fail, quantify the patterns that characterize discovery and invention, and offer lessons to improve science as a whole. In this talk, I will highlight some examples of research in this area, hoping to illustrate the promise of science of science as well as its limitations.

Presentation of the Award to the Awardee

Prize Talk SOE 3.2 Mon 16:00 HSZ 03

Complexity science can address marginalization in society and algorithms — •Fariba Karimi — Technical university of Vienna — Complexity Science Hub Vienna

Structural marginality refers to structural conditions that push certain groups towards a network*s margins, limiting their access to resources. Despite its importance, there are minimal quantitative understanding of its manifestation in networks and are thus we are unequipped to answer several urgent societal questions. For example, what underlying structural mechanisms drive marginalization? How can marginalized groups improve their social positions? How do AI systems reinforce these effects? Do hard (mathematical) limits exist on actions that would alleviate structural inequalities? In this talk, I argue that tools in complexity science are instrumental in measuring structural marginalities that emerge in society and algorithms.

After the Award Session, there will be an informal get-together with beer and pretzels at the poster session