



# On the Future of the Planet: the Universal Laws of Life, Growth, Death and Sustainability from Organisms to Cities.

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**Webcast 13:00 h**



Why do we stop growing, live for 100 years and sleep 8 hours a day? Why do all companies and people die whereas cities keep growing and the pace of life continues to accelerate? And how are these related to innovation, wealth creation social networks, urbanization and the long-term sustainability of the planet? These are among the questions that will be addressed in this lecture. Although life is probably the most complex and diverse phenomenon in the Universe, many of its fundamental characteristics scale with size in a surprisingly simple fashion: metabolic rate, for example, scales in a systematically predictable way from cells to whales, while time-scales from lifespans to growth-rates, and sizes from genome lengths to tree heights, likewise scale systematically. Remarkably, cities, companies and universities also exhibit systematic scaling: wages, profits, patents, crime, disease, and roads all scale in an approximately “universal” fashion. The origin of these laws, which constrain much of the organization and dynamics of life, will be explained and a conceptual framework based on the generic principles of the underlying networks that sustain life ranging from circulatory systems to social networks will be presented. Their dynamics, which transcend history, geography and culture, have dramatic implications for growth, development and long-term sustainability; left unchecked, innovation and wealth creation that fuel socio-economic systems potentially sow the seeds for collapse.

This is a **VIDEO COLLOQUIUM!**

Connection details at <https://desy.zoom.us/j/99616528733>

Meeting ID: 996 1652 87333, Meeting Password: 733220



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