Life will arise on planets given the availability of 4 key ingredients: organic raw materials, free energy from disequilibria, liquid water, and time; a caveat being that the first steps to biology (the Darwinism Threshold) were the most difficult. To understand these steps, we need to understand planets. To understand planets, we employ the physics and chemistry of the solid state a.k.a. geology and its tangible record from the oldest minerals, rocks and meteorites to follow complex histories. For example, the steps leading to an operative biome occurred at a time of frequent impacts by comets, left-overs of accretion, and asteroids. Such events strongly modified the surfaces of the inner planets at the time life took hold.

New physical, chemical and dynamical studies show that a biosphere could emerge and persist in the first ~150 million years of the solar system. I will show new approaches in Earth & Planetary studies to untangle the thermal history of the crustal template for life, and explore how the geosphere interacted with a primordial hydrosphere and atmosphere. Although we do not yet understand where, why or how life emerged on our world, we can now answer, when.

Tuesday, March 24, 2020 10:00am - 11:00am
IST Austria Campus Mondi Seminar Room 2, Central Building

This invitation is valid as a ticket for the IST Shuttle from and to Heiligenstadt Station. Please find a schedule of the IST Shuttle on our webpage: https://ist.ac.at/en/campus/how-to-get-here/' The IST Shuttle bus is marked IST Shuttle (#142) and has the Institute Logo printed on the side.