The origin of life is one of the fundamental, unsolved riddles of modern science. Life as we know it is a stunningly complex non-equilibrium process, keeping its entropy low against the second law of thermodynamics. Therefore it is straightforward to argue that first living systems had to start in a natural non-equilibrium settings.

Recent experiments with non-equilibrium microsystems suggest that geological conditions should be able to drive molecular evolution, i.e. the combined replication and selection of genetic molecules towards ever increasing complexity.

To be successful, an effort on the origin of life has to be embedded in a strong and very active interdisciplinary background of biology, biochemistry, chemistry, astrogeology and not the least, theoretical modeling at various levels of abstraction.