



Fyzikální ústav Akademie
věd České republiky
Institute of Physics of the
Czech Academy of Sciences

CELOÚSTAVNÍ SEMINÁŘ FZU COLLOQUIUM

20. 3. 2019 | 14:00

jídelna | dining hall

Cukrovarnická 10/112, Praha 6

Oleg Lunov

Institute of Physics of the Czech Academy of Sciences

PHYSICAL CUES AND CELL BEHAVIOUR: CRITICAL OVERVIEW

Physics-based biomedical approaches have proved their importance for the advancements of medical sciences and especially in medical diagnostics and treatments. Thus, the expectations regarding development of novel promising physics-based technologies and tools are very high. Indeed, a strong relationship always existed between physics and medicine. We describe the latest research advances in biomedical applications of external physical cues. Furthermore, we summarize the progress, challenges and opportunities in those directions. However, those technologies need to prove if they can actually meet the high expectations in evidence based medicine controlled health care systems. Such bleeding edge research, as it often happens with frontiers in sciences, is hampered by shortcomings in experimental design and sometimes by a lack of reproducibility. We also discuss some of the fundamental physical principles involved in the application of each cue. Considerable technological success has been achieved in those fields. However, for the successful clinical translation we have to understand the limitations of technologies. Importantly, we identify the misconceptions pervasive in the discussed fields.

