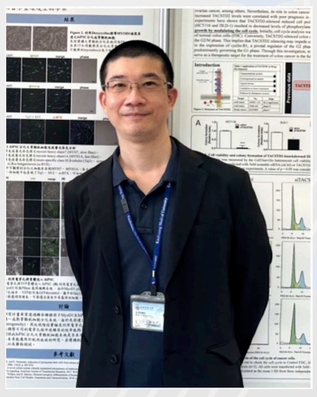
NSYSU physics 書報討論

Weekly Seminar

Physics in Stem Cell Research and Developmental Biology

林壯宇 Chuang-Yu Lin



Department of Biomedical Science and Environmental Biology,
Kaohsiung Medical University, Kaohsiung

URL: https://biology.kmu.edu.tw/index.php/en-gb/faculty-members/290-assistant-professor

URL QR

14:10-15:00 Thu-26/Nov/2026, at 地址: PH2006

Abstract

Cell fate decisions and organ formation are governed by the interplay of mechanical forces, bioelectric signals, and thermodynamic principles. Mechanical cues, such as tissue tension, cell adhesion, and extracellular matrix stiffness, regulate cellular behavior through mechanotransduction. Bioelectric signals, mediated by ion channels and membrane potentials, coordinate cell proliferation, migration, differentiation, and tissue patterning. Meanwhile, thermodynamic processes regulate energy distribution, molecular interactions, and cellular self-organization. Understanding how these physical mechanisms interact is essential for providing insights into stem cell differentiation, embryonic development, tissue regeneration, and organ formation, which can accelerate stem cell research and explore potential applications in regenerative medicine and tissue engineering.

Designed with help from www.freepik.com

Location 地址: PH2006