



第 492 回つくば分子生命科学セミナー

TSUKUBA MOLECULAR LIFE SCIENCE SEMINAR

演題 : Space Life Sciences Across Frontiers: Research to Enable Human Exploration and Improve Life on Earth

演者 : Fathi Karouia 先生

Blue Marble Space Institute of Science, NASA Ames Research Center

日時 : 2025 年 10 月 15 日 (水) 10:00-11:00

会場 : 筑波大学健康医科学イノベーション棟 8 階講堂

Zoom 登録リンク :

<https://us06web.zoom.us/meeting/register/V5brH4FeQU2vANhjNG3OZQ>



要旨 : Space provides a unique environment to study the fundamental processes of life and the limits of human adaptation. Microgravity, space radiation, and isolation accelerate biological changes that mirror ageing, chronic disease, and immune decline on Earth. By studying astronauts and model organisms aboard the International Space Station, we uncover molecular and physiological mechanisms that shape human health across extreme environments. These discoveries inform the development of medical countermeasures, regenerative medicine approaches, and biomanufacturing platforms essential for long-duration exploration missions. At the same time, they offer translational value for terrestrial healthcare, from healthy ageing and chronic disease management to the delivery of diagnostics and therapies in remote and resource-limited regions. Space life sciences also extend beyond human health to the broader question of life itself, with astrobiology research probing adaptation, survival, and resilience in extreme conditions relevant to other worlds. This seminar will highlight recent advances in space biology, astronaut health, in-space biomedical manufacturing, and enabling technologies—demonstrating how research at the frontier of space exploration contributes not only to preparing humanity for deep space but also to improving life on Earth.

本セミナーは、医学学位プログラム（博士）「医学セミナー」（担当：専攻各教員）、及び、フロンティア医科学学位プログラム（修士）「医科学セミナーII」（担当：入江賢児）の関連セミナーに相当します。また、本セミナーは学術変革領域研究(A)「宇宙が映す生命」との共催です。

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科研費・学術変革領域研究(A)「宇宙が映す生命」<https://www.life-in-space.org>

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協会代表：筑波大学医学医療系 久武幸司 TSMM セミナー担当：筑波大学医学医療系 藤栄治