

Prof. Robert R. Knowles (Princeton University, USA)

## **Organic Synthesis Away from Equilibrium**

- Place: Hokkaido University, Frontier Research in Applied Sciences building Lecture Hall
- **Time:** Thursday, 12 June 2025 15:00-17:00



**Abstract:** Inspired by biological photosynthesis and advances in solar fuels chemistry, our lab has become interested in light-driven strategies for organic synthesis

wherein excited-state redox events facilitate transformations that are otherwise thermodynamically unfavorable. These electron transfer-based schemes provide a general mechanism for driving reactions in opposition to a thermodynamic gradient by selectively channeling the energy generated from photon-absorption events. Moreover, as these reactions occur across multiple free energy surfaces, they are able to circumvent the constraints of microscopic reversibility that govern thermal processes and enable unique forms of selectivity. Several recent projects will be discussed.

A seminar series organized by the Mita Group (WPI-ICReDD, Hokkaido University)

