

# ASHBi SEMINAR

## Mechanisms of Disease Progression in Cancer

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**Date** Wednesday, 23 April 2025

**Time** 13:30 – 14:30 [JST]

**Venue** Conference Room **Onsite Only\***  
B1F, Faculty of Medicine Bldg. B

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### Abstract

*KRAS* mutant lung adenocarcinoma is the major form of lung cancer that remains a major challenge for clinical oncology because patients are refractory to standard-of-care. *KRAS* mutant tumors display a high degree of genetic heterogeneity and emerging clinical data suggest that specific *KRAS* co-mutations are associated with poor prognosis and failure of cancer therapies. Our group uses genetically engineered mouse models and patient samples to dissect how genetic subsets of *KRAS* mutant lung cancer promote tumorigenesis by rewiring cancer cell metabolism, promoting immune evasion and therefore contributing to tumor progression and therapy resistance. We have identified novel therapeutic approaches to both suppress tumor metabolism and reverse the immunosuppressive microenvironment of genetic subsets of *KRAS*-driven lung cancer.

Furthermore, our group is investigating how cancer as a systemic disease can lead to dysfunction of multiple organ systems, which is observed in many lung cancer patients. We are dissecting the interplay of tumor mutations, nutrition and changes in systemic physiology during tumorigenesis. Our studies highlight that genetic subtypes of *KRAS* mutant lung cancer can interact with common diets to disrupt systemic physiology. We aim to identify and therapeutically target the underlying mechanisms in order to restore homeostatic control of physiological functions.

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