



# 部門公開セミナー

共催：新学術領域研究「配偶子幹細胞制御機構」

## **Stem cell self-renewal in homeostasis and in preneoplastic tissue**

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Stem cells can balance division and differentiation in homeostasis, but this balance is lost during tissue growth, regeneration and in disease. In this talk I will review how lineage tracing experiments can be used to infer stochastic stem cell behaviour in vivo using a statistical approach, and I will then provide two examples of changes in stochastic stem cell fate following drug treatment or mutation. In the first example, retinoic acid is applied to the mouse epidermis leading to a rise in symmetric divisions; in the second example, we study p53 mutant cells in the epidermis of normal and transgenic mice, and we find these cells to be imbalanced towards proliferation leading to preneoplastic growth. I will conclude the talk by describing experiments to better understand why stem cell fate appears to be stochastic, and how we might work towards predicting individual stem cell behaviour.

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