



# CDB SEMINAR

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Tuesday, July 9, 2013

11:00~12:00 C1F Auditorium

## Characterising epithelial cell movements in the visceral endoderm of the mouse embryo

### Summary

The anterior visceral endoderm (AVE) is a specialised sub-set of cells within the visceral endoderm (VE) that plays a central role during embryonic development. Through its stereotypic migratory movement, the AVE is responsible for the correct orientation of the anterior-posterior axis and is essential for the progression of embryonic development.

We have previously shown that the VE is a simple epithelium. AVE cells negotiate their way through the plane of this epithelium by neighbour exchange, while preserving the epithelial integrity of the VE. Using time-lapse microscopy we have demonstrated that regional differences in cell behavior in the VE regulate AVE migration and specify the limits of this migration. Renderings of high resolution 3D confocal image volumes indicate that these regional differences in cell behaviour correlate with differences in the localisation of molecular motors like myosin IIA and f-actin. Computational modelling and studies in various mutants indicate that Nodal dependent Wnt-PCP signalling is required for the orderly migration of AVE cells.

I will describe our ongoing work to understand how AVE cells migrate in the context of an intact epithelium. Specifically, I will discuss our recent work using high-resolution time-lapse microscopy to visualise f-actin dynamics and actin-rich cellular projections during AVE migration. I will discuss the possibility that AVE migration might be driven by basal projections rather than through the remodeling of apical junctional complexes.

### Host:

#### Shinichi Aizawa

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