NUS National University of Singapore | Department of Biological Sciences, Faculty of Science

BIOLOGY COLLOQUIUM

Friday, 10 November 2017 | 4pm | DBS Conference Room 1

Hosted by A/P Christoph Winkler

More than just skin and bones:

Implications for disease and cell communication from the genetics of zebrafish fin morphogenesis

By Tom James Carney

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Our lab is interested in the cross-talk between matrix and the tissues it supports during development and repair. In particular, we are interested in how cells modify the matrix around them. This is particularly critical for skeletal and skin homeostasis, as these tissues contain a large amount of matrix in the bone and dermis, respectively. We use the fins of larval and adult zebrafish as a model system to determine the interactions of fibroblasts and matrix in the dermis with the overlying epidermis, as well as osteoblasts for production of matrix. In particular, the larval fin is an exquisitely simple tissue to analyse the dermal-epidermal interface. Through genetic analysis, we have identified structural and signalling systems at this interface, including unexpected and novel roles for axon guidance systems. These results have implications for understanding human genetic diseases, and defined novel roles for signalling pathways.

Artwork by Ann Nee, DBS, NUS