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Wnt signals in the specification, regeneration and neogenesis of ectodermal appendages

Thursday, June 11, 2009
9:30 am

BRB Dermatology Conference Room (BRB 532)

Learning objective:

- 1) Understand principles underlying embryonic development of skin appendages including hair follicles, mammary glands and teeth
- 2) Understand how embryonic signals are re-utilized in adult life to control cyclical growth of certain ectodermal organs
- 3) Explore how embryonic signals could be manipulated in adult ectodermal cells to regenerate organs for therapeutic purposes

Reading References:

- Millar, S. E. (2002). Molecular mechanisms regulating hair follicle development. *Journal of Investigative Dermatology* 118, 216-225.
- Andl, T., Reddy S. T., Gaddapara, T. & Millar, S. E. (2002). WNT signals are required for the initiation of hair follicle development. *Developmental Cell*, 2, 643-653.
- Liu, F., Thirumangalathu, S., Gallant, N. M., Yang, S. H., Stoick-Cooper, C. L., Reddy, S. T., Andl, T., Taketo, M. M., Dlugosz, A. A., Moon, R. T., Barlow, L. A., Millar, S. E. (2007). Wnt-beta-catenin signaling initiates taste papilla development. *Nat Genet.* 39, 106-12.
- Zhang, Y., Andl, T., Yang, S. H., Teta, M., Liu, F., Seykora, J. T., Tobias, J. W., Piccolo, S., Schmidt-Ullrich, R., Nagy, A., Taketo, M. M., Dlugosz, A. A., Millar, S. E. (2008). Activation of beta-catenin signaling programs embryonic epidermis to hair follicle fate. *Development* 135, 2161-72.