



# PROGRESS IN NEUROSCIENCE PINS



Seminar Series of the  
Brain & Mind Research Institute  
Weill Cornell Medical College (WCMC)  
&

The Graduate Program in Neuroscience of  
WCMC and Sloan Kettering Institute

Thursday, 9/12/13, 4 PM, coffee at 3:45 PM  
Weill Auditorium

## Generation and Regeneration of Neuronal Identity in the Olfactory System

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### Abstract:



Olfactory sensory neurons choose one odorant receptor gene from over 1,000 possibilities encoded in the genome, and express it from only one allele. This paradigmatic example of transcriptional regulation choice generates over 2,000 different neuronal subtypes and plays a critical role in the formation of the circuit from nose to brain. We have used a transgenic approach in mice to reveal central parameters of this process which allows the continuous production of myriad neuronal subtypes throughout life.

### Recent relevant publications:

Shykind BM, Rohani SC, O'Donnell S, Nemes A, Mendelsohn M, Sun Y, Axel R, and Barnea G. 2004. Gene switching and the stability of odorant receptor gene choice. *Cell* 117: 801- 815.

Fleischmann\* A, Shykind\* BM, Sosulski DL, Franks KM, Glinka ME, Mei DF, Sun Y, Kirkland J, Mendelsohn M, Albers MW, and Axel R. 2008. Mice with a "Monoclonal Nose": Perturbations in an Olfactory Map Impair Odor Discrimination. *Neuron* 60: 1068-1081

Fleischman A., Abdus-Saboor I, Sayed A, and Shykind BM. Functional Interrogation of an Odorant Receptor Locus Reveals Multiple Axes of Regulation. 2013. *PLoS Biol.* 11(5): e1001568



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