

**9.14 class #31: New neurons for adult brain: normal and by fetal brain tissue transplantation.**

*Readings:*

- Olanow, C.W., Kordower, J.H. and Freeman, T.B., "Fetal nigral transplantation as a therapy for Parkinson's disease", *Trends in Neuroscience* 1996,19: 103 - 109.
- Kempermann, G. and Gage, F.H., " New nerve cells for the adult brain" ,*Sci. American* 1999,280: 48-53.
- Sawle, G.V., " Living neurochemistry: the dopaminergic system", *Seminars in the neurosciences* ,1995,7: 173-177.

*Questions:*

1. Why might the topographic organization of connections not be a critical factor in the functioning of nigrostriatal connections from transplanted tissue?
2. Describe the critical nature of donor age in transplant procedures, and why this might be expected.
3. How can imaging of the living brain be used to assess transplant success?
4. How has neuroanatomical assessment been done using tissue obtained at autopsy? Describe a result.
5. What problem does the size of the human corpus striatum pose for transplant procedures? How far can axons grow from the transplants?
6. How is locus of a transplant within the striatum related to possible functional effects?
7. Why do you think that the functional improvements after transplants have such a slow onset and slow progression?
8. What are one or two future alternatives to transplants of tissue from human fetal substantia nigra?