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# Inflammatory and neurogenic mechanisms of epilepsy

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Previous studies using several epilepsy models have revealed several common neuroanatomical changes that occur in these models. These include: astrocyte and microglial activation, as well as changes to newborn neurons in the dentate gyrus. The glial cells are involved in the release of inflammatory proteins and also provide a substrate for aberrant growth of neurons after injury. The newborn neurons contribute to the development of recurrent excitatory circuitry by at least 3 distinct anatomical mechanisms: (i) mossy fiber sprouting, (ii) ectopic migration, (iii) aberrant sprouting and synaptic integration of basal dendrites. Collectively, these changes to newborn neurons and glial cells promote a pro-epileptogenic state. This talk will highlight experiments from my lab that focus on the aberrant sprouting and integration of basal dendrites and glial influences in epilepsy.

## Biography

Dr. Shapiro has completed his Ph.D at State University of New Yrok, Stony Brook and postdoctoral studies from University of California, Irvine. He has published more than 30 papers in reputed journals and recently was the Guest Editor for a special issue on Aging and Epilepsy in the Journal "Aging and Disease". His lab uses several models of epilepsy to examine anatomical and molecular mechanisms of seizure disorders in hopes of developing better therapeutic strategies.