

## **The Use of Animal Models for the Early Identification and Characterization of Anticonvulsant Efficacy**

Since 1993, nine new antiepileptic drugs have been brought to the world-wide market for the symptomatic treatment of epilepsy. These include felbamate, gabapentin, lamotrigine, fosphenytoin, topiramate, tiagabine, levetiracetam, zonisamide, oxcarbazepine, vigabatrin, and pregabalin. In addition, there are a number of investigational drugs currently in clinical development that will likely be available over the next 1-3 years. All of these drugs have been developed on the basis of their ability to block seizures in one or more animal seizure or epilepsy models employed by the NINDS, NIH Anticonvulsant Screening Project under the direction of Mr. James P. Stables (StableJ@ninds.nih.gov). Interested parties are encouraged to visit the NINDS web-site (<http://ninds.nih.gov/funding/research/asp/index.htm>) for additional information.

Despite the apparent success of the current discovery process, a significant need persists for more efficacious and less toxic antiepileptic drugs (AEDs). This is particularly true for patients whose seizures remain refractory to the currently available AEDs. Discussion will focus on the current process employed by the Anticonvulsant Drug Development Program at the University of Utah in collaboration with the NINDS Anticonvulsant Screening Project and other laboratories working towards the common goal of discovering better therapeutic options for patients living with epilepsy. The presentation will also include a brief overview of the inherent advantages and limitations of the primary animal models employed in the search for new antiepileptic drugs, while offering insight into potential future directions as we seek to better understand the pathophysiology underlying acquired epilepsy, therapy resistance, and epileptogenesis.