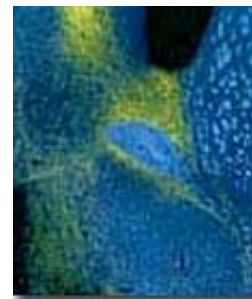




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### Research Interests

We are interested in understanding the mechanisms of certain neurological and autoimmune diseases as well as the roles played by environmental agents, age and genetics in the initiation, progression, potentiation, treatment and prevention of these conditions. Through collaborations, we also participate in studies on Parkinson's disease (Dr. Jay Gorell), systemic lupus erythematosus (Dr. Bruce Richardson), stroke (Dr. Richard Keep), and proteomics (Dr. Douglas Gage). Current projects include: (1) examination of interactions between ligands (e.g., organophosphorus compounds) and target macromolecules (e.g., acetylcholinesterase and other serine hydrolases) using kinetics and molecular modeling; (2) identification and quantification of adducts between ligands and macromolecules using mass spectrometry; (3) characterization of expression and function of lymphocyte neuropathy target esterase; (4) assessment of neurobehavioral parameters in humans occupationally exposed to pesticides and other chemicals using epidemiological studies; and (5) elucidation of mechanisms of nervous system injury and its modulation by drugs or toxicants following ischemia/hypoxia and reoxygenation using electrophysiological, morphological and biochemical measurements in both in vitro and in vivo models of stroke.

### Selected References

Huggins, D.J. and Richardson, R.J.: Brainstem axolemmal protein phosphorylation in vitro in hens dosed with di-1-butyl-2,2-dichlorovinyl phosphate. *J. Toxicol. Environ. Health* 56, 263-282, 1999.



Jianmongkol, S., Marable, B.R., Berkman, C.E., Talley, T.T., Thompson, C.M., and Richardson, R.J.: Kinetic evidence for different mechanisms of acetylcholinesterase inhibition by (1R)- and (1S)-stereoisomers of isomalathion. *Toxicol. Appl. Pharmacol.* 155, 43-53, 1999.

Gorell, J.M., Richardson, R.J., et al. Occupational exposure to manganese, copper, lead, iron, mercury and zinc and the risk of Parkinson's disease. *Neurotoxicology* 20, 239-248, 1999.

Kayyali, U.S. and Richardson, R.J.: Apoptosis and neurotoxicity. In: *Target Organ Toxicity: Neurotoxicology* (H.A. Tilson and G.J. Harry, Eds.), pp. 265-285, Taylor and Francis, Philadelphia, 1999.

Doorn, J.A., Richardson, R.J. et al. Inhibition of acetylcholinesterase by (1S,3S)-isomalathion proceeds with loss of thiomethyl: kinetic and mass spectral evidence for an unexpected primary leaving group. *Chemical Research in Toxicology*. 13:1313-20, 2000

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