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*2004 Program
New Investigator (3-year project)*

Project Title: Molecular Mechanism of Nicotine Effect on Reproductive Function

Project Summary: Tobacco smoke contains many different harmful chemicals that can cause cancer, heart disease, birth defects and infertility. Nicotine disrupts the mitochondrial ultrastructure of testicular cells, decreasing sex steroid production and impairing reproductive function. This project will identify the ways in which nicotine interferes with mitochondrial function by studying its effect on mitochondrial import of the StAR protein. Completing this project will provide new insight into how nicotine poisons the mitochondrial energy generators of all cells, and especially about how nicotine poisons the production of steroid hormones. This knowledge will eventually help scientists find ways to repair some of the damage that happens with years of tobacco smoke.