

Contact: Diana Gonzalez

PROPOSED NEW CENTER
IOWA CENTER FOR ADVANCED NEUROTOXICOLOGY
AT IOWA STATE UNIVERSITY

Action Requested: Consider recommending approval to the Board of the request by Iowa State University to establish the Iowa Center for Advanced Neurotoxicology (ICAN) in the College of Veterinary Medicine (CVM).

Executive Summary: The proposed center will include research, graduate education, and educational activities of advanced (human and animal) neurotoxicology and the study of neurodegeneration. The Center will become the Comparative Neurotoxicology Research Unit in the College of Veterinary Medicine for investigation of the cellular and molecular mechanisms of neurotoxic effects of agents that affect both animal and human health. This proposal was reviewed by the Board Office and the Council of Provosts and is recommended for approval. There were no objections to the new center.

Background:

◇ Description of Neurotoxicology.

- ☑ Neurotoxicology is a key area of toxicology as a result of such emerging issues as prion¹ diseases, chemical warfare or terrorism, food contamination, and environmental links to neurodegenerative disorders.
- ☑ Neurotoxicology bridges the scientific fields of toxicology and neuroscience and has a significant impact on industry, the economy, the environment, and the health of humans and animals.

◇ Current Research. Basic research in neurotoxicology in the Department of Biomedical Sciences is focused on neurotoxins that may be involved in diseases; it includes identification of toxins linked to Parkinson's disease, identification of neurotoxins of parasitic worms for application as parasiticides, and investigation of prion diseases.

◇ Need for the Center.

- ☑ The interdepartmental toxicology program and neuroscience program are significant assets for the development of a strong neurotoxicology research unit in CVM. However, currently, there is no dedicated neurotoxicology research unit in CVM.
- ☑ Construction of dedicated neurotoxicology research laboratories is expected to support the development of a nationally recognized Molecular Neurotoxicology Research Center to meet the needs of the state and beyond.

¹ A prion – short for proteinaceous infectious particle – is a unique type of infectious agent, made only of protein. Prions are abnormally-structured forms of a host protein, which are able to convert normal molecules of the protein into the abnormal structure. Wikipedia

◇ Resources.

- ☑ The proposed Center will be funded primarily by research grants from the National Institutes of Health (\$868,548); in addition, CVM will allocate \$155,000 for two faculty lines – a basic science neurotoxicologist and a clinical pharmacology/toxicologist.
- ☑ Faculty from the five departments in CVM will collaborate in the Center.

◇ Benefits of the Center.

- ☑ The new knowledge resulting from the neurotoxic research will improve diagnoses and treatment of diseases and conditions associated with the nervous system.
- ☑ The Center will foster translational research focusing on discovery of novel diagnostic and treatment strategies for neurotoxicological problems.

◇ Duplication. There are no comparable programs in the state.

◇ Link to Strategic Plan.

- ☑ Neuroscience was selected as one of four major focus areas of research for the College of Veterinary Medicine in its 2000-05 Strategic Plan. As a result, the College made a significant effort to recruit neuroscience faculty with specific expertise.
- ☑ The proposed Center will support ISU's Strategic Plan (2005-10) "to increase the number of graduate, professional, and research programs that are among the very best – especially in areas that build on university strengths and address local and global critical needs" and the Board of Regents' strategic plan to "ensure high-quality educational opportunities for students."

Responses to the Board of Regents' center approval questions are on file in the Board Office.