

Contact: Rachel Boon

**REQUEST FOR NEW CENTER AT THE UNIVERSITY OF IOWA:
IOWA CENTER FOR NEURODEGENERATION**

Action Requested: Consider approval of the request by the University of Iowa for a new Iowa Center for Neurodegeneration in the Carver College of Medicine (CCOM).

The Council of Provosts and Board office support approval of this request.

Background: Neurodegenerative diseases, such as Alzheimer's disease, Parkinson's disease, Dementia with Lewy Bodies, Frontotemporal Dementia, and Amyotrophic Lateral Sclerosis, will affect millions of Americans and hundreds of thousands of Iowans in the coming years. These devastating diseases have no cures or disease-modifying therapies because the mechanisms of neurodegeneration remain unclear. As the population in Iowa skews older, this will be a particular challenge for this state in coming decades.

The proposed Iowa Center for Neurodegeneration will be housed under the Iowa Neuroscience Institute (INI) and the Department of Neurology and will partner closely with the Pappajohn Biomedical Institute (PBI), the Iowa Institute for Biomedical Imaging (IIBI), and the Department of Radiology.

Need for proposed center. Although neurodegenerative disease is a major opportunity for federal funding, the efforts are currently diffuse. Integrating basic science, clinical research and clinical efforts in the area of neurodegeneration under one umbrella has the potential to create a collaborative, cohesive and synergistic center that will allow for maximization of research and clinical efforts on campus. This will help improve research productivity with a focus on outcomes for underserved rural populations within Iowa and beyond, as well as provide visibility and connection to the University of Iowa Hospitals and Clinics' (UIHC) community of patients and their families. Additionally, this 'center' designation will increase local and national visibility and enhance the reputation of the program. This will aid in researcher recruitment and retention efforts with the goal of seeking NIH program-project funding or major philanthropic gifts to support the center's mission. A potential outcome of the center designation may be to catalyze efforts towards a National Institute on Aging (NIA)-funded Alzheimer's Disease Research Center (ADRC). ADRCs are designed to expand and diversify research and education opportunities to new areas of the country, new populations and new areas of science. UIHC/CCOM is well-positioned to achieve this goal.

Activities and objectives of proposed center. The proposed center's goal is to advance research, diagnostics, advocacy and ultimately therapies to provide the best care for patients and their families. The proposed center has a diverse team composed of neurologists, neuroscientists, biochemists, physiologists, neuropsychologists, neuro-imaging scientists and data-scientists to help expand the clinical and research focus in neurodegenerative diseases and space on the 5th floor of the Pappajohn Biomedical Discovery Building (PBDB) has immediate proximity to experts in cell biology and metabolism.

The formation of this new center leverages recent progress in Parkinson's disease at the UIHC/CCOM, that earned the institution the designation as a Clinical Center of Excellence from the Parkinson's Disease Foundation and the team received a positively scored Parkinson's Research Center of Excellence from the National Institutes of Health (NIH). This momentum will transfer to other neurodegenerative diseases.

The establishment of the center will enable recruitment of new faculty, development of core resources and building collaborations that will lead to transformational discoveries in neurodegenerative disease. For instance, at UIHC/CCOM it was recently discovered that an existing drug enhances cellular energetics and can reverse damage in Parkinson's disease models. Excitingly, retrospective analyses suggested that such drugs could be neuroprotective for Parkinson's disease, and researchers have started clinical trials in Parkinson's disease patients at UIHC. The center will provide the support and infrastructure for these and related efforts to study new directions in neurodegenerative disease.

Relationship to mission and strategic plan. The institutional mission of SUI and UIHC/CCOM are focused on education, research and clinical care. The proposed center's goals are in alignment with these broader missions and focused at targeted objectives of UIHC/CCOM's strategic plan. Furthermore, these goals align with the long-term focus on aging. The new center would greatly enhance interdisciplinary work, focus investments in neuroscience, and enhance recruitment and retention of diverse faculty, students and staff. The proposed center will be supported by existing resources within the Department of Neurology, the INI, the IIBI, the Department of Radiology, CCOM and the PBI.

Relationship to other centers/institutes at the university. The proposed center will live under the umbrellas of the Department of Neurology and the INI, the latter a premier institute on campus that brings together the best and brightest in the field across the university to help advance brain research. The new center would promote transformational discovery as well as aid in highlighting SUI as a destination for research, education, and clinical care in neurodegenerative diseases across Iowa, the Midwest and the nation.

Relationship to centers/institutes at other universities in Iowa and potential for collaboration. UIHC is a world-class hospital and the only one in the state of Iowa with Cognitive and Behavioral Neurology or Movement Disorders clinics with subspecialty trained neurologists who treat patients with neurodegenerative disease. There is no research center or institute in the state of Iowa with a similar emphasis. If the center is approved, collaboration with Iowa State University's Department of Biomedical Sciences in the College of Veterinary Medicine will be explored.

Resources, facilities and equipment required. Required personnel to maintain the center are already present through the INI and the Departments of Neurology, Psychiatry, Radiology, Biochemistry, Neurosurgery and Internal Medicine in the CCOM; the College of Engineering; and the Department of Psychological and Brain Sciences in the College of Liberal Arts and Sciences.

The required facilities and resources already exist within the institution.

- INI
- 5th Floor PBDB
- Cores
 - Iowa Neurobank
 - Metabolomics Core
 - Neurophysiology Core
 - Iowa Institute for Biomedical Imaging
- Data science
- Neurology Clinics
 - Movement Disorders
 - Cognitive Neurology
 - Amyotrophic Lateral Sclerosis
 - Benton Neuropsychology

- Neurosurgery Clinic
- PET Center

The required equipment already exists within the institution.

- INI 2-photon
- Microscopy
- Clinical and preclinical MRI
- Clinical and preclinical PET
- Metabolomics

Expected funding sources. The proposed center has strong momentum based on existing funds and NIH grants.

- Administrative support from the Sitz Endowment / Department of Neurology - \$25,000/year
- \$15 million dollars in direct costs from NIH grants

Additionally, there is tremendous support from the UI Center for Advancement. Significant philanthropic support has been designated for research efforts, training, and future goals. A center designation will provide a focus for these gifts. Once these are established and promoted, it is anticipated that the new center would continue to attract philanthropic interest from donors who will play a vital role in supporting these efforts.

Evaluation plan. Center researchers will meet yearly with the Department of Neurology and the INI to track progress towards: 1) total grants on neurodegenerative disease at the UI, 2) number of patients seen with neurodegenerative disease, 3) progress towards center grants, and 4) progress towards an Aging and Disability Resource Center (ADRC) grant. In addition, since the new center will fall under the umbrella of the INI, it will undergo Board of Regents review as part of the INI review process.

Date of implementation. Upon approval by the Board of Regents.