

Contact: Rachel Boon

**REQUEST FOR NEW CENTER AT THE UNIVERSITY OF IOWA:
HAWKEYE INTELLECTUAL AND DEVELOPMENTAL DISABILITIES RESEARCH CENTER**

Action Requested: Consider approval of the request by the University of Iowa for the Hawkeye Intellectual and Developmental Disabilities Research Center in the Carver College of Medicine.

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

Background: The mission of the University of Iowa "Hawkeye" Intellectual and Developmental Disabilities Research Center (Hawk-IDDRC) is to provide an organizational structure that fully integrates basic and clinical research across the lifespan - from conception to adulthood - that is focused on the prevention, diagnosis, treatment and amelioration of intellectual and developmental disabilities (IDDs), tailored to an underserved rural population. In fact, this proposed center was recently awarded a \$6.2 million P50 Center Grant through the National Institutes of Health, and will leverage decades of clinical excellence, community engagement and educational programs for those in Iowa with disabilities. For half a century, the Center for Disabilities and Development (CDD) has been continuously funded as Iowa's University Center for Excellence in Developmental Disabilities (UCEDD) and has administered the federally-funded LEND program (Leadership Education for Neurodevelopmental Disabilities) for almost three decades. These are key components of the mission and focus on research, clinical care, community outreach, and education, all of which will enhance outcomes for patients and their families.

Need for proposed center. There is a need to integrate UI's basic science and clinical research efforts in the area of IDD, under one umbrella, to create a collaborative, cohesive and transparent center that will allow for maximization of research efforts on campus. This will help to improve research productivity with a focus on outcomes for underserved rural populations within Iowa and beyond and help UI continue to have visibility and a connection to the community of patients and their families. Additionally, this center designation will increase visibility locally and nationally as well as enhance the reputation of this program. This will aid in recruiting efforts, retention of talent and a goal to seek major philanthropic gifts to support the mission.

Activities and objectives of proposed center. The Hawk-IDDRC includes four components: 1) the Hawk-IDDRC Research Project will examine the interaction of genetic and epigenetic/environmental risks in young children with developmental disabilities, including autism, and integrate services from all four research cores; 2) the four research cores will facilitate interdisciplinary and translational research, including: an administrative core that provides leadership to ensure cost-effective and rigorous IDD research, while inspiring interdisciplinary collaboration and innovation; a clinical translational core, which will apply basic science discoveries into clinical settings by streamlining patient recruitment and phenotyping, biobanking and implementing clinical trials for the development of novel treatments that can be employed across the lifespan; a developmental genomic/epigenetics Core, which will use RNA/exome/whole genome sequencing to uncover intrinsic genetic variation and the contributions of extrinsic (environmental and experiential) factors on epigenetic regulation, and the association of these with IDD; and a neurocircuitry and behavior core, which will assess both animal and human neural circuit development and function, electrophysiology, and behavior; 3) a dissemination and communication plan that ensures Hawk-IDDRC research is effectively communicated to the scientific community, educators, policy makers, government officials and the public, in an engaging and timely manner; and 4) an educational program, involving basic and

clinical scientists, trainees, the public and IDD-affected families, that will feature monthly seminars, mentoring of young and talented investigators focused on IDD research, and an educational program aimed at the lay public and IDD community. The Hawk-IDDRC will integrate and capitalize upon strong existing resources in the Hawkeye State: (a) the nationally renowned CDD; (b) the Iowa Neuroscience Institute (INI); (c) Iowa's UCEDD, and (d) the Iowa LEND program. The center will foster strong existing collaborations between basic and clinical scientists, as well as the IDD community and their families, and support 73 federally-funded projects (\$28 million per year). The stable, non-transitory rural population in Iowa and an interconnected telehealth system uniquely position Hawk-IDDRC investigators to conduct longitudinal, multi-generational research, for which the University of Iowa is renowned. By providing the infrastructure to direct these outstanding resources, the Hawk-IDDRC will become a leading force in the study of IDD.

Relationship to mission and strategic plan. The institutional mission of the University of Iowa and the Carver College of Medicine are focused on education, research and clinical care. The core goals of this center, as outlined above, are in alignment with these broader missions and focused on targeted objectives of the college's strategic plan. These targets include enhancing interdisciplinary work, especially in the field of neuroscience; recruitment and retention of diverse faculty and staff; and a focused effort on the development of core research.

Relationship to other centers/institutes at the university. The Hawk-IDDRC will support and be supported by numerous other centers and institutes, including: the INI, the CDD, the Clinical and Translational Science Award (CTSA)-funded Institute for Clinical and Translational Research (ICTR), the Iowa Institute for Human Genetics (IIHG), the Magnetic Resonance Research Facility, the Clinical Trials and Statistical and Data Management Center, and the Environmental Health Sciences Research Center. Patricia Winokur, Executive Dean of the College of Medicine and Director of the Institute for Clinical and Translational Science (ICTS), will serve on the Internal Advisory Committee to help connect the Hawk-IDDRC with other university centers and institutes.

Relationship to centers/institutes at other universities in Iowa and potential for collaboration. There is no research center or institute in the state of Iowa that focuses solely on research on intellectual and developmental disabilities. The CDD, which will house the administrative core of the Hawk-IDDRC, is primarily focused on clinical research and patient care, education, and community outreach. The INI will primarily support basic science research. The Hawk-IDDRC will be part of a national network of IDDRCs, which will ensure collaboration and coordination across institutions in other states.

Resources, facilities and equipment required. Personnel that would be required to maintain the center are already in existence through the INI and CDD. Drs. Ted Abel and Lane Strathearn bring complementary expertise to the Hawk-IDDRC, with Dr. Abel providing expertise in fundamental neuroscience and rodent models of IDD and Dr. Strathearn bringing clinical and translational expertise.

- Dr. Ted Abel, PhD is the Roy J. Carver Chair in Neuroscience, the Chair and Department Executive Officer of the Department of Neuroscience and Pharmacology, and Director of the INI in the Carver College of Medicine at the University of Iowa, with secondary appointments in the Departments of Molecular Physiology and Biophysics, Psychiatry, Biochemistry, and Psychological and Brain Sciences. He is a member of the National Academy of Medicine and a Fellow of the American Association for the Advancement of Science. His extensive experience in leadership positions, as well as his long-standing interest in defining the molecular mechanisms of neurodevelopmental disorders, makes him highly qualified to lead the Hawk-IDDRC.

- Dr. Lane Strathearn, MBBS, FRACP, PhD is the William E. Bell/Gail A. McGuiness Endowed Chair for Pediatric Neurodevelopment Professor of Pediatrics, the Division Director for Developmental and Behavioral Pediatrics at the University of Iowa, and Physician Director of the CDD at the University of Iowa Stead Family Children's Hospital. He has secondary appointments in the Departments of Psychiatry, Neuroscience and Pharmacology, and Psychological and Brain Sciences, and appointments in the INI, the DeLTA Center, and the Neuroscience Graduate Program. He is the Director of the Attachment and Neurodevelopment Laboratory, in which he examines the neurobiology of mother-infant attachment, and neurodevelopmental disabilities such as autism.

The Hawk-IDDRC will utilize existing facilities from throughout the UI, such as the INI, CDD, ICTR, IIHG, the Magnetic Resonance Research Facility, the Clinical Trials and Statistical and Data Management Center, and the Environmental Health Sciences Research Center.

Likewise, the Hawk-IDDRC will utilize existing equipment as part of the Research Cores, such as instrumentation and resources that support nucleic acid- and genome-based technologies including: Genome Sequencing (NGS-based); DNA Sequencing (Sanger-based); DNA Microarrays; Oligonucleotides; Nucleic Acid Quality Assessment; Real-time qPCR; Digital PCR. MR Imaging equipment will include 3.0T GE Discovery Premier MRI Scanner, the 7.0T GE 950 Whole Body MRI Scanner and the Discovery MRI Small Animal Scanner.

Expected funding sources. Significant funding is already identified for the next five years.

- NIH - \$6,200,000 over 5 years
- Carver College of Medicine - \$500,000 over 5 years
- INI - \$125,000 over 5 years
- Dept of Pediatrics - \$125,000 over 5 years
- Dept of Psychiatry - \$125,000 over 5 years

The center expects to continue to be awarded competitive grant funding primarily through the NIH and also generate funds from foundations and philanthropy.

Total costs for the first five years are estimated below.

| TOTAL COSTS | SOURCE(S) OF FUNDS | TOTAL NEW COSTS |
|-------------|---|-----------------|
| Year 1 | NIH, CCOM, INI, Dept of Peds and Psychiatry | \$995,000 |
| Year 2 | NIH, CCOM, INI, Dept of Peds and Psychiatry | \$981,000 |
| Year 3 | NIH, CCOM, INI, Dept of Peds and Psychiatry | \$982,000 |
| Year 4 | NIH, CCOM, INI, Dept of Peds and Psychiatry | \$991,000 |
| Year 5 | NIH, CCOM, INI, Dept of Peds and Psychiatry | \$921,000 |

Evaluation plan. An annual center evaluation will be conducted toward the end of each fiscal year, drawing upon 1) the 6-monthly core user surveys which are reviewed by each of the four core user committees; 2) reports from CDD's Parent Advisory Council (PAC) and Community Partnership Advisory Council (CPAC); 3) a yearly written evaluation from the internal advisory committee; and 4) a site visit by the external advisory committee (in Years 2 and 4). Two executive

committee members will be assigned to review each of these areas before formal discussion in the end-of-year executive committee meeting. Center evaluation will be a monthly agenda item for the Executive Committee, and an entire meeting will be dedicated to the annual review at the end of each fiscal year. A final report will be written by Center Co-Directors and included in the NIH Annual Report and distributed to Hawk-IDDRC members, the UCEDD Coordinating Committee and community groups.

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.