



Early Detection of Chronic Wasting Disease

What is Chronic Wasting Disease?

- **Chronic Wasting Disease (CWD) is a highly contagious, neurodegenerative disease** spreading through Minnesota’s white-tailed deer population.
- CWD has spread within the United States for over 50 years—currently found in 23 states.

What is the concern about CWD?

- **CWD does not appear to naturally infect cattle or other domesticated animals.**
 - Wildlife managers struggle to identify infected animals before they infect others.
- Currently, the only way to document the spread of CWD is by killing the animal to obtain tissues for testing—long after an infected animal has spread the disease to others.



What is proposed?

- **U of MN researchers would spend 2 years and \$1.8 million to develop a rapid and reliable diagnostic test that uses samples from living deer to facilitate early detection of CWD—giving crucial time to manage infected animals.**
 - o The funding would 1) support research personnel, 2) acquire equipment for specialized research, and 3) design an advanced ante-mortem diagnostic assay for CWD.
- Specifically, the project would:
 - o Use non-invasive samples including saliva, blood, and fecal material.
 - o Identify biomarkers specific to CWD infection in blood samples.
 - o Extract and concentrate CWD prion proteins for diagnostic development.
 - o Validate an ante-mortem CWD diagnostic assay at the UMN Veterinary Diagnostic Laboratory.

Why is the University of Minnesota uniquely qualified to do this work?

- **We have a core research team with the required expertise** in the areas of prion disease, neurodegenerative disease, genomics, and nanotechnology.
- **Past state support has provided the University with the necessary biocontainment facilities** to safely handle these highly-infectious samples.

| Requested Funds | |
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| Personnel (3 postdocs, 1 technician, PI summer salary; includes fringe; 2 years) | \$588,753 |
| UMN Core Facilities (genomics, proteomics, antibody and protein production, test validation equipment) | \$570,000 |
| Molecular laboratory equipment and supplies (dedicated prion work) | \$382,000 |
| Nanotechnology R&D (microfluidic assay development and validation) | \$140,000 |
| UMN Biocontainment Facility (prion biocontainment; CWD research suite) | \$72,800 |
| CWD sample acquisition, postdoc training courses | \$50,000 |
| Total funds requested | \$1,803,553 |