

DPRIT-Ready Initiative

Research Areas

UTRGV Division of Research

The Texas Legislature has established the Dementia Prevention and Research Institute of Texas (**DPRIT**) with an unprecedented \$3 billion investment to advance research on dementia, Alzheimer's disease, Parkinson's disease, and related disorders. This represents one of the largest state investments in biomedical research in U.S. history, with annual funding capacity of up to \$300 million for competitive grants to Texas institutions. DPRIT will support research across the full spectrum, from basic science and drug development to clinical trials, prevention programs, and health services research. This is a once-in-a-generation opportunity to build transformative research programs that advance scientific knowledge while serving our communities.

This spring the bill to create DPRIT, [Senate Bill 5](#), by Sen. Joan Huffman, and the companion [House Bill 5](#), authored by Rep. Tom Craddick and 119 co-sponsors, passed both the Senate and the House. Senate and House [Joint Resolution 3](#) also passed by the Legislature would fund it with \$3 billion in surplus revenue.

On May 25, 2025, Texas Governor Greg Abbott signed DPRIT into law.

DPRIT supports a wide range of research activities, including:

- Basic mechanisms of neurodegeneration
- Drug discovery and therapeutics development
- Biomarker discovery and diagnostic tools
- Clinical trials and translational research
- Epidemiology and risk factor research
- Prevention programs and interventions
- Health disparities and community-based research
- Care delivery and health services research
- Technology and artificial intelligence applications
- Caregiver support and quality of life research

To maximize UTRGV's competitiveness, we are launching a proactive institutional effort to identify research opportunities, build collaborative teams, and develop compelling proposals before the official Request for Proposals is released (*anticipated after March 2026*) by DPRIT.

Visit our website for more information: [DPRIT-Ready Initiative](#).

In this document, you will find a detailed list of research areas and topics relate to the DPRIT-Ready Initiative.

DPRIT-Ready Initiative -- UTRGV Division of Research

For questions, please reach out to Dr. Megan Keniry at megan.keniry@utrgv.edu

1 Basic Science & Mechanisms

1.1 Molecular & Cellular Mechanisms

- Protein misfolding and aggregation (amyloid-beta, tau, alpha-synuclein)
- Cellular stress responses and proteostasis
- Mitochondrial dysfunction and bioenergetics
- Oxidative stress and neuroinflammation
- Synaptic dysfunction and neuronal connectivity
- Glial cell contributions to neurodegeneration
- Epigenetic modifications in dementia pathogenesis
- RNA processing and non-coding RNA roles

1.2 Genetics & Genomics

- Genetic risk factors and GWAS studies
- Rare variant discovery in Hispanic populations
- Gene-environment interactions
- Polygenic risk scores for dementia prediction
- Pharmacogenomics for treatment response
- Somatic mutations in aging brains
- Genetic modifiers of disease progression

1.3 Neuroscience & Brain Function

- Neural circuit dysfunction in dementia
- Neurotransmitter system alterations
- Brain connectivity and network analysis
- Cognitive reserve mechanisms
- Neuroplasticity and compensation
- Sleep-wake cycle disruptions
- Sensory processing changes

1.4 Systems Biology & Computational Approaches

- Multi-omics integration (genomics, proteomics, metabolomics)
- Systems-level modeling of disease progression
- Machine learning for biomarker discovery
- Network analysis of molecular pathways
- Computational drug target identification

2 Translational Research & Therapeutics

2.1 Drug Development & Repurposing

- Novel therapeutic target validation
- Small molecule drug discovery
- Antibody-based therapeutics
- Drug repurposing from other indications
- Drug delivery systems crossing blood-brain barrier
- Combination therapy strategies
- Pharmacokinetics and pharmacodynamics studies

2.2 Biologics & Advanced Therapeutics

- Gene therapy approaches
- Cell-based therapies (stem cells, immune cells)
- Antisense oligonucleotides and RNA therapeutics
- CRISPR and gene editing applications
- Immunotherapy and vaccine development
- Protein replacement strategies

2.3 Medical Devices & Technologies

- Deep brain stimulation optimization
- Transcranial magnetic/electrical stimulation
- Neurofeedback and brain-computer interfaces
- Wearable monitoring devices
- Assistive technologies for daily living
- Virtual reality for cognitive training

2.4 Clinical Trial Design & Implementation

- Novel trial designs for dementia (adaptive, platform trials)
- Biomarker-driven patient stratification
- Preclinical to clinical translation
- Real-world evidence studies
- Clinical trial network development in Hispanic communities

DPRIT-Ready Initiative -- UTRGV Division of Research

For questions, please reach out to Dr. Megan Keniry at megan.keniry@utrgv.edu

3 Biomarkers & Diagnostics

3.1 Fluid Biomarkers

- Blood-based biomarkers (plasma, serum)
- Cerebrospinal fluid analysis
- Saliva and tear biomarkers
- Exosomes and extracellular vesicles
- Proteomic signatures
- Metabolomic profiles
- Inflammatory markers

3.2 Imaging Biomarkers

- Amyloid and tau PET imaging
- Structural MRI and volumetric analysis
- Functional MRI and connectivity mapping
- Diffusion tensor imaging
- MR spectroscopy
- Novel PET tracers for early detection
- Multimodal imaging integration

3.3 Cognitive & Functional Assessments

- Digital cognitive assessment tools
- Ecological momentary assessment
- Functional performance measures
- Patient-reported outcomes
- Caregiver burden assessment
- Quality of life instruments
- Culturally adapted assessment tools for Hispanic populations

3.4 Point-of-Care Diagnostics

- Rapid screening tools for primary care
- Smartphone-based assessments
- Home-based monitoring technologies
- Community health worker deployable tools

4 Epidemiology & Population Health

4.1 Risk Factors & Etiology

- Cardiovascular risk factors and dementia
- Diabetes and metabolic syndrome contributions
- Traumatic brain injury and dementia risk
- Environmental exposures (air pollution, pesticides)
- Infectious disease contributions
- Nutritional factors and dietary patterns
- Physical activity and sedentary behavior
- Social engagement and isolation
- Educational attainment and cognitive reserve

4.2 Health Disparities Research

- Dementia incidence and prevalence in Hispanic populations
- Socioeconomic determinants of dementia risk
- Healthcare access barriers in border communities
- Cultural beliefs and stigma around dementia
- Language barriers in diagnosis and care
- Rural vs. urban dementia outcomes
- Immigration status and healthcare utilization
- Discrimination and chronic stress effects

4.3 Longitudinal Cohort Studies

- Community-based cohort establishment
- Natural history studies of dementia progression
- Risk factor modification trials
- Intergenerational studies of dementia risk
- Bilingual cohort development

4.4 Implementation Science

- Translation of evidence-based interventions
- Healthcare delivery system optimization
- Policy implementation studies
- Dissemination research in diverse communities
- Sustainability of prevention programs

DPRIT-Ready Initiative -- UTRGV Division of Research

For questions, please reach out to Dr. Megan Keniry at megan.keniry@utrgv.edu

5 Prevention & Health Promotion

5.1 Lifestyle Interventions

- Physical activity programs
- Dietary interventions (Mediterranean diet, MIND diet)
- Cognitive training and brain games
- Social engagement programs
- Sleep hygiene interventions
- Stress reduction (meditation, mindfulness)
- Multi-domain lifestyle interventions
- Community-based prevention programs

5.2 Cardiovascular Risk Management

- Hypertension control programs
- Diabetes management for dementia prevention
- Lipid management strategies
- Obesity reduction interventions
- Smoking cessation programs

5.3 Early Detection & Screening

- Population-based screening strategies
- Subjective cognitive decline assessment
- Family history risk assessment programs
- Primary care screening protocols
- Community health worker screening models

5.4 Health Education & Awareness

- Public awareness campaigns
- Educational interventions for high-risk groups
- Brain health promotion in schools
- Workplace wellness programs
- Faith-based community interventions
- Spanish-language educational materials

6 Clinical Care & Management

6.1 Diagnostic Approaches

- Standardized diagnostic protocols
- Differential diagnosis optimization
- Early detection in primary care
- Subspecialty referral pathways
- Telemedicine diagnostic approaches for rural areas

6.2 Treatment Protocols

- Medication management strategies
- Behavioral and psychological symptom management
- Multi-morbidity treatment approaches
- Polypharmacy reduction
- Complementary and integrative medicine
- Palliative care approaches

6.3 Care Coordination & Models

- Integrated care delivery models
- Patient-centered medical homes for dementia
- Care navigation programs
- Transitions of care optimization
- Home-based care models
- Community-based services coordination

6.4 Caregiver Support

- Caregiver training and education programs
- Respite care service models
- Psychological support interventions
- Technology-assisted caregiving
- Caregiver health and wellness programs
- Bilingual caregiver resources

DPRIT-Ready Initiative -- UTRGV Division of Research

For questions, please reach out to Dr. Megan Keniry at megan.keniry@utrgv.edu

7 Technology & Innovation

7.1 Digital Health Technologies

- Mobile health applications for dementia
- Remote monitoring platforms
- Telehealth delivery models
- Electronic health record optimization
- Clinical decision support systems
- Patient portals and engagement tools

7.2 Artificial Intelligence & Machine Learning

- Diagnostic algorithms
- Predictive modeling of disease progression
- Natural language processing for cognitive assessment
- Computer vision for behavioral monitoring
- Precision medicine approaches

7.3 Sensor Technologies

- Wearable activity monitors
- Smart home sensors for safety
- Passive monitoring systems
- Fall detection and prevention
- Wandering detection systems

7.4 Assistive Technologies

- Cognitive prosthetics
- Memory aids and reminder systems
- Social robotics for companionship
- Augmented reality for daily activities
- Smart medication management

8 Health Services & Systems Research

8.1 Healthcare Delivery

- Access to dementia specialty care
- Primary care integration of dementia services
- Emergency department utilization patterns
- Hospitalization prevention strategies
- Post-acute care transitions

8.2 Healthcare Financing

- Cost-effectiveness analyses
- Medicare/Medicaid policy impacts
- Value-based care models
- Financial burden on families
- Return on investment for prevention programs

8.3 Workforce Development

- Provider training and education
- Specialist workforce planning
- Community health worker roles
- Interprofessional team training
- Dementia care certification programs

8.4 Healthcare Quality

- Quality indicators for dementia care
- Patient safety in dementia populations
- Quality improvement interventions
- Comparative effectiveness research
- Best practice dissemination

DPRIT-Ready Initiative -- UTRGV Division of Research

For questions, please reach out to Dr. Megan Keniry at megan.keniry@utrgv.edu

9 Social & Behavioral Research

9.1 Behavioral Symptoms

- Agitation and aggression management
- Depression and anxiety in dementia
- Apathy and motivation
- Sleep disturbances
- Wandering and elopement behavior
- Eating and nutritional behaviors

9.2 Communication

- Language and communication preservation
- Aphasia interventions
- Bilingual dementia considerations
- Augmentative communication strategies
- Person-centered communication training

9.3 Social Determinants

- Housing security and quality
- Food security and nutrition
- Transportation access
- Social support networks
- Community safety
- Environmental design for dementia

9.4 Cultural Factors

- Cultural beliefs about dementia and aging
- Traditional healing practices
- Family caregiving norms
- End-of-life decision making
- Culturally adapted interventions
- Health literacy in diverse populations

10 Special Populations & Considerations

10.1 Early-Onset Dementia

- Diagnostic challenges in younger adults
- Genetic counseling and testing
- Employment and financial planning
- Family support needs
- Disease-specific considerations (FTD, etc.)

10.2 Advanced Dementia

- End-stage care approaches
- Comfort care and pain management
- Artificial nutrition and hydration decisions
- Advance care planning
- Hospice and palliative care integration

10.3 Dementia with Co-morbidities

- Dementia and serious mental illness
- Dementia in intellectual/developmental disabilities
- Dementia and substance use disorders
- Dementia and sensory impairments
- Dementia and mobility limitations

10.4 Underserved Populations

- Rural communities
- Low-income populations
- Limited English proficiency individuals
- Homeless individuals with dementia
- Incarcerated older adults