### Advancing ASD Research

**Background**

Advancing ASD Research: Studying human biospecimens is essential to advance our understanding of the pathogenesis and treatment of neurological disease, including Autism Spectrum Disorders (ASD). The lack of suitable human biospecimens to conduct ASD research and develop new treatment options is a significant impediment for the field. More effective approaches and reliable sources of human biospecimens are needed to address this gap for the ASD research community. Here we report our efforts to address this gap and advance ASD research through supporting the development of a human tissue bank that provides high-quality human biospecimens to the ASD research community.

**Key Objectives:**

1. Discuss screening tools to identify, authorize, and recover biospecimens from ASD and normal control donors.
2. Report on the need for greater access to human neurological biospecimens.

### NDRI Contributes to Neurological Disease Research Through Human Tissue and Organ for Research Resource (HTORR)

- **NDRI’s HTORR program has been funded by the NIH for > 30 years.**
- **Through HTORR, NDRI supports a range of neurological research.**

**NDRI’s Brain Donor Screening Worksheet (DSW) Enables Identification of Critical Donor Opportunities:** NDRI developed a donor screening worksheet (DSW) utilized by all partnering OPOs to clearly rule potential brain donors in or out for the ASD project. OPO staff use the DSW for each potential brain donor. If a donor is eligible, OPO approach NOK for authorization. Eligibility criteria are shown in the table above.

**NDR’s and TSS Partners Are Essential For the Success of the ASD Program**

<table>
<thead>
<tr>
<th>ASD Donors</th>
<th>Normal Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASD diagnosis (Autism, Asperger’s, or Pervasive Dupt disorder)</td>
<td>No neurological disorders</td>
</tr>
<tr>
<td>No chemo/radiation in past 24 months</td>
<td>No chemo/radiation in past 24 months</td>
</tr>
<tr>
<td>No sepsis at time of death</td>
<td>No sepsis at time of death</td>
</tr>
<tr>
<td>Ventilator &lt; 24 hours</td>
<td>Ventilator &lt; 24 hours</td>
</tr>
<tr>
<td>Collection must occur within 24 hours of cardiac cessation</td>
<td>Collection must occur within 24 hours of cardiac cessation</td>
</tr>
</tbody>
</table>

**NDRI Receives Donor Offer and Confirms Eligibility**

**NBB Stores and Ships Tissue to Investigators**

**NDRI Arranges Tissue Shipment to NIH NBB**

**TSS Receives Brain and Temporal Muscle**

**Identifying ASD and Normal Pediatric Control Donors Requires Enhanced Donor Screening**

- **Meet the Unmet Needs of the AD/ADRD Research Community**
  - **Identify the donor criteria and biospecimens of greatest need with an ADRB Advisory Council**
  - **Collaborate with TSS to develop methods for screening, authorizing, and recovering biospecimens from eligible AD/ADRD donors.**

### The NIH NeuroBioBank Facilitates Cutting-edge ASD Research by Providing Access to Valuable Donated Specimens

The impact of the resource is evident by high-impact investigator publications, including:


### Alzheimer’s Disease Biospecimen Resource (ABDR)

- **Identify the donor criteria and biospecimens of greatest need with an ADRB Advisory Council**
- **Collaborate with TSS to develop methods for screening, authorizing, and recovering biospecimens from eligible AD/ADRD donors.**

Supplemental HTORR Funding Will Support a Resource for Alzheimer’s Disease and Related Dementias (AD/ADRD) Research: The National Institute on Aging (NIA) at NIH awarded AD/ADRD research. AD/ADRD research. NDRI leads an advisory council made up of NIH, academic, and industry leaders in the field whose goal is to identify the areas of greatest need within AD/ADRD research.

**Summary:**

1. ASD investigators require greater access to human brains to expand our understanding of pathophysiology of ASD and develop new treatments.
2. The NIH’s NeuroBioBank partnership with NDRI expands their reach to AD/ADRD research opportunities to support a diverse range of studies.
3. NDRI is building upon their established ASD donation model to support other neurological biospecimen needs for the research community.

### Acknowledgements

- Supported by NIH Grant 3U42OD011158-28S2 to NDRI
- Partnering TSS: Center for Organ Recovery and Education, Dakota Lions Sight and Health, Donor Network West, Gift of Life Donor Program, LifeGift, LifeLink Foundation, LifeNet Health, Mid-America Transplant, Unyts, Washington Regional Transplant Center
- NDRI would also like to thank the donors and their families for providing valuable donations to advance ASD research.