

## 2020 CART Grants



Dr. Greg Lemke

**Grant- \$250,000 – Roger and Deane Ackerman Memorial Grant (perpetual award for top research for this class of scientist) – Greg Lemke, PhD**

**CART Research Goal: TAM receptor regulation of the vasculature in Alzheimer's disease**

Endothelial Mer controls the expression of multiple genes linked to human AD, maintains the blood brain barrier, which is critical to the course of AD development, and promotes neo-angiogenesis by endothelial cells in the brain. For these and other reasons detailed in the proposal, we hypothesize that Mer is a critical regulator of vascular dysfunction in AD. We will explore this hypothesis at both systemic and molecular levels.



**Dr. Na Zhao**

**Grant - \$250,00 – *Dr John Trowjanowski Honorary Grant (one time award)* - Na Zhao, M.D., Ph.D.**

**CART Research Goal – Elucidating the effects of apoE on TDP-43 pathogenesis in Alzheimer’s disease**

Address how human apoE isoforms differentially modulate the pathogenesis of TDP-43 pathology in Alzheimer’s disease and to define the underlying molecular pathways using animal models, postmortem human brains, and induced pluripotent stem cell (iPSC)-derived human models.



**Dr. Marius Wernig**

**Grant- \$250,000 – Marius Wernig PhD**

## **CART Research Goal – Microglia engineering to combat Alzheimer’s disease**

Essentially all microglia of a mouse’s brain can be efficiently replaced with transplanted hematopoietic cells derived from bone marrow. This procedure does not require any genetic modification of host animal or donor cells and is thus readily applicable to any kind of disease model (and in principle to people).



**Dr. Maj-Linda B. Selenica**

## **Grant - \$125,000 – Maj-Linda B. Selenica PhD**

**CART Research Goal** – The goal of this study is to unravel how citrullination impacts tau metabolism, aggregation, and ultimately the tau phenotype in mice (hallmarks comprised of tau effects). The outcomes of this study will provide a new target for tauopathies but might also reveal critical knowledge about how citrullination regulates proteinopathies.



**Dr. Catherine Diaz-Asper**

**Grant - \$125,000** – Catherine Diaz-Asper PhD

**CART Research Goal** – Assessing Early Cognitive Decline

Create an effective cognitive analysis tool that uses telephonic interviews with subjects and then use semantic analytic tools to diagnose early memory impairment.