**For Immediate Release**
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# American Neurological Association highlights abstracts to be presented at the 143rd Annual Meeting October 21-23, 2018 in Atlanta

## *Studies show potential to improve treatment for Parkinson's disease, Alzheimer's disease, stroke, neuropathy, spinal injury, and more*

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**(MOUNT LAUREL, NJ, September 12, 2018) —** Methods to more precisely inject stem cells into the spinal cord; an enzyme that enhances the synthesis of dopamine in people with Parkinson's disease; a drug that protects against chemotherapy-induced neuropathy – these are just a few of the exciting research findings that will be presented at the American Neurological Association's 143rd Annual Meeting **October 21-23, 2018** at the Hyatt Regency Atlanta.

More than 800 of the nation's top academic neurologists as well as students, trainees, and international professionals will convene for three days of research at the vanguard of neurology and neuroscience.

A complete list of abstracts, under embargo until the start of the meeting, will be made available to journalists after **Friday, September 21** upon request.

For the first time, the meeting will feature a **media roundtable on Monday, October 22, 2018 from 11:45-1:00 p.m.** at which presenters of the six principal symposia will present highlights, discuss the relevance of the work, and answer questions.

Members of the media are welcome to attend the full meeting and **can preview the full advance program here. For the meeting schedule at a glance, click here.**

**To register and obtain press credentials, please click here.**

Until then, below is a sampling of some of the translational science that will be presented:

**1. Chadwick Christine, MD, UCSF Medical Center: "VY-AADC01 in Medically Refractory Parkinson's Disease: Safety and Efficacy of a Phase 1b Dose-ranging Study 12 Months and Beyond"**

Investigators at UCSF and UPMC report an early phase clinical trial of adenovirus-delivered gene therapy for the treatment of Parkinson's Disease that is resistant to standard medical treatment. The engineered virus is injected into a brain region called the putamen to transfer DNA that encodes an enzyme called AADC. This enzyme enhances the synthesis of the neurotransmitter, dopamine, which is reduced in Parkinson's. In this preliminary study, improvements in mobility and reduction in abnormal movements were still measurable a year and a half out from treatment. Though the patient numbers are small and further larger trials are required, this study provides highly encouraging support for the potential of gene therapy in Parkinson's disease.

**2. Nicolas Barthélemy, PhD, and Randall J. Bateman, MD, Washington University at St. Louis: "Profiling Alzheimer Disease Stages in Dominantly Inherited Alzheimer Disease Using CSF Tau Phosphorylation Isoforms: Position Matters"**

Tau is a neuronal protein that is a key part of the plaques and tangles that are hallmarks of brains affected by Alzheimer's Disease (AD). Although Tau has important normal functions, a modification called phosphorylation of the Tau protein has been implicated in AD. In an inherited form of AD for which the disease progression can be more accurately predicted, investigators at Washington University at St. Louis report that phosphorylation on a particular amino acid of Tau can be measured in patient spinal fluid, correlating with the distinct biological stages of the disease. Importantly, phosphorylated Tau starts increasing as early as 21 years before the estimated age of symptom onset and 2 years before signs of AD are seen on brain imaging. This study shows that chemical markers of AD in patients may enable identification of those at greatest risk so that treatment can be started early and success of the selected treatment may be assessed biochemically, without having to wait decades to see an outcome.

**3. Alexander Merkler, MD, PhD, Weill Cornell Medical College: "Duration of Heightened Ischemic Stroke Risk After Acute Myocardial Infarction"**

The weeks following a heart attack have been associated with an increased risk of stroke, but how long that increased risk lasts was unknown until now. Investigators at Weill Cornell Medicine studied the course of 1,750,000 patients suffering an acute myocardial infarction between 2008-2015, selected randomly from Medicare beneficiaries aged 66 or older. After adjustment for other factors, they found that the risk of stroke was still elevated up to 3 months after acute heart attack, two months longer than was previously thought. These results will likely encourage more active and prolonged stroke prevention management of patients after a heart attack.

**4. Ahmet Hoke, MD, PhD, Johns Hopkins University: "Development of EQ-6 for Neuroprotection Against Chemotherapy-induced Peripheral Neuropathy"**

Chemotherapy induced peripheral neuropathy (CIPN) causes numbness, tingling and often burning pain mostly in limbs that limits the use of effective anticancer drugs. Investigators at Johns Hopkins University have produced a modification, EQ-6, of their previously reported candidate for a drug that could prevent nerve damage due to the chemotherapeutic drug, paclitaxel. Here they report that EQ-6 prevents nerve fiber loss, sensory changes, and reduces protein markers of nerve damage in animal models of CIPN. Furthermore, EQ-6 was well tolerated without any significant toxicity. This is an important step toward clinical trials of a drug that may prevent one of the most long lasting and debilitating side effects of chemotherapy.

**5. Bridgette Jeanne Billioux, MD, National Institute of Neurological Disorders and Stroke: "Case Series of Ebola Survivors from Liberia with Neurological Sequelae Undergoing In-Depth Neurological Evaluation at the National Institutes of Health"**

Acutely, Ebola Virus Disease (EVD) causes severe brain symptoms including seizures, meningitis, coma and stroke-like symptoms. However, the long-term effects on brain among EVD survivors are poorly understood. Investigators at NIH have studied 20 Liberian volunteers who survived the West African Ebola epidemic in 2015, three of whom underwent intensive evaluations including brain imaging and nerve function testing. Preliminary findings suggest EVD survivors demonstrate residual effects of meningoencephalitis and small blood vessel disease presenting as persistent abnormalities on brain imaging, visual, motor and cognitive functions. Although more data including controls of non-Ebola sufferers matched from the same community are needed, these studies indicate that measures to protect brain from the effects of EVD will be critical to successful management of the acute infection.

**6. Suman Dutta, PhD, and Gal Bitan, PhD, UCLA: "α-synuclein in Brain-derived Blood Exosomes Distinguishes Multiple System Atrophy From Parkinson's Disease"**

Clumps and deposits of a synaptic protein, $\alpha$-synuclein, are found in neurons and certain glia of patients with Parkinson's disease (PD), Dementia with Lewy body disease (DLB), and multiple system atrophy (MSA), but distinguishing these overlapping diagnoses is often challenging. Exosomes are tiny packets filled with protein, DNA and RNA that are shed by cells and brain derived $\alpha$-synuclein containing exosomes have recently been identified in blood. Investigators from UCLA have examined neuronal and oligodendroglial exosomes isolated from blood samples of 50 healthy controls, 50 patients with PD and 30 patients with MSA. They found that $\alpha$-synuclein was elevated in patients relative to controls and that the fractions of the protein in neuronal to glial exosomes were different enough to distinguish PD from MSA patients with 90% accuracy and sensitivity. This is a significant step toward developing a blood test specific for diagnosing these "synucleinopathies" in life, paving the way for more precise prevention and treatment of these devastating brain diseases.

**7. Eleanor Donnelly, PhD, Georgia Institute of Technology: "Image-Guided Delivery, Tracking and Quantification of Stem Cells in the Spinal Cord"**

As stem cells are intensively studied for their usefulness in restoring injured or degenerating nerves, tools are needed for the delivery of these cells to the right place in the spinal cord while minimizing any additional damage to the tissue. Investigators at Georgia Tech report a new method of using a

photoacoustic contrast agent and ultrasound needle guidance to precisely inject stem cells into the spinal cord of experimental animals. The labeled stem cells could be tracked to observe their numbers and distribution over time within the spinal cord. This tool has great potential for application to the development of cell therapeutics for spinal cord trauma and diseases like ALS.

"This meeting reflects a landmark year in neurology, as we highlight cell-based therapies coming on board for neurological disorders," said M. Elizabeth Ross, MD, PhD; Director, Center for Neurogenetics at Weill Cornell Medicine and Chair of the ANA's Scientific Program Advisory Committee.

"There's a feeling of optimism in neurology as we anticipate having a range of new and highly effective tools for improving the lives of many individuals with neurological disorders."

2018 Plenary Sessions include:

- Viral Based Vectors in Neurotherapeutics
- Lewy Body Dementia: From Symptoms to Synuclein **featuring Susan Schneider Williams, widow of the late comedian Robin Williams,** who suffered from Lewy Body Dementia (Monday, Oct 22, 9:15-11:15 am)
- Advances in Cell-Based Therapeutics
- Inflammation and Neurological Disease: Friend or Foe?
- Toward Disease-Modifying Therapies in Traumatic Brain Injury
- Vascular Contribution to Dementias

**About the American Neurological Association (ANA)**

From advances in stroke and dementia to movement disorders and epilepsy, the American Neurological Association has been the vanguard of research since 1875 as the premier professional society of academic neurologists and neuroscientists devoted to understanding and treating diseases of the nervous system. Its monthly *Annals of Neurology* is among the world's most prestigious medical journals, and the ANA's *Annals of Clinical and Translational Neurology* is an online-only, open access journal providing rapid dissemination of high-quality, peer-reviewed research related to all areas of neurology. The acclaimed ANA Annual Meeting draws faculty and trainees from the top academic departments across the U.S. and abroad for groundbreaking research, networking, and career development. For more information, visit www.myana.org or @TheNewANA1

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