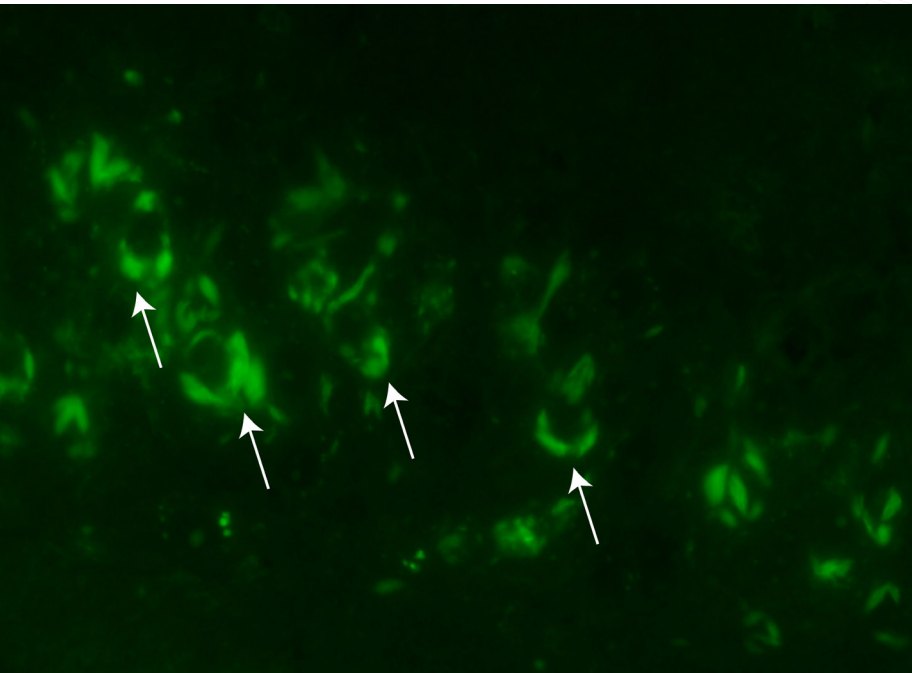


*“Virginia M.-Y. Lee and John Q. Trojanowski have become one of the world’s leading teams in the study of Alzheimer’s disease, Parkinson’s Disease ... and related neurodegenerative disorders of aging.”*



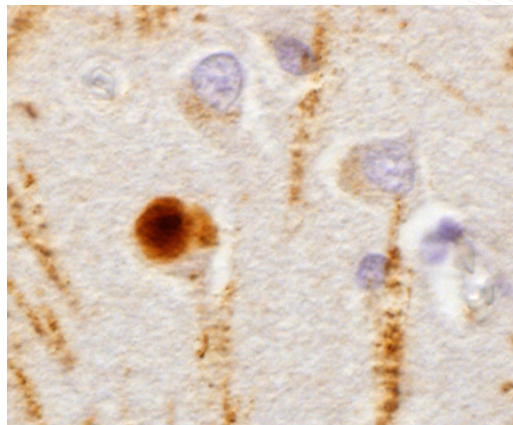
VIRGINIA  
M.-Y. LEE

JOHN Q.  
TROJANOWSKI



Above: Neurons filled with tangles (arrows) in medial region of hippocampus one month after injection of synthetic tau fibrils into the hippocampus.  
Photo: Michiyo Iba.

Right: Lewy body (brown) in human tissue with Parkinson’s disease, 2014.



Virginia M.-Y. Lee (MBA 1984) and John Q. Trojanowski (GME 1980), who both joined the Penn faculty in 1981, have become one of the world’s leading teams in the study of Alzheimer’s disease, Parkinson’s disease (PD), frontotemporal dementias, amyotrophic lateral sclerosis (ALS, Lou Gehrig’s disease), and related neurodegenerative disorders of aging. In 1991, they launched Penn’s Center for Neurodegenerative Disease Research (CNDR), which Lee serves as director. In the same year, Lee and Trojanowski challenged a dominant theory in Alzheimer’s disease research that attributed neurodegeneration in cognitively impaired brains solely to plaques of amyloid-beta protein. They demonstrated that the protein tau is a building block of tangles, one of the characteristics and causes of impairment in Alzheimer’s disease, in addition to amyloid-beta. Lee, Trojanowski, CNDR scientists, and their colleagues have also identified  $\alpha$  - synuclein as a protein in Lewy bodies, the hallmark of PD, and TDP-43, a protein involved in ALS. More recently, they found that misfolded  $\alpha$  - synuclein can be transmitted from cell to cell in mouse models and are applying this discovery toward finding a treatment for people with PD.

Excerpted from *To Spread the Light of Knowledge: 250 Years of the Nation’s First Medical School*. Visit <https://www.med.upenn.edu/psom250> to explore the book.