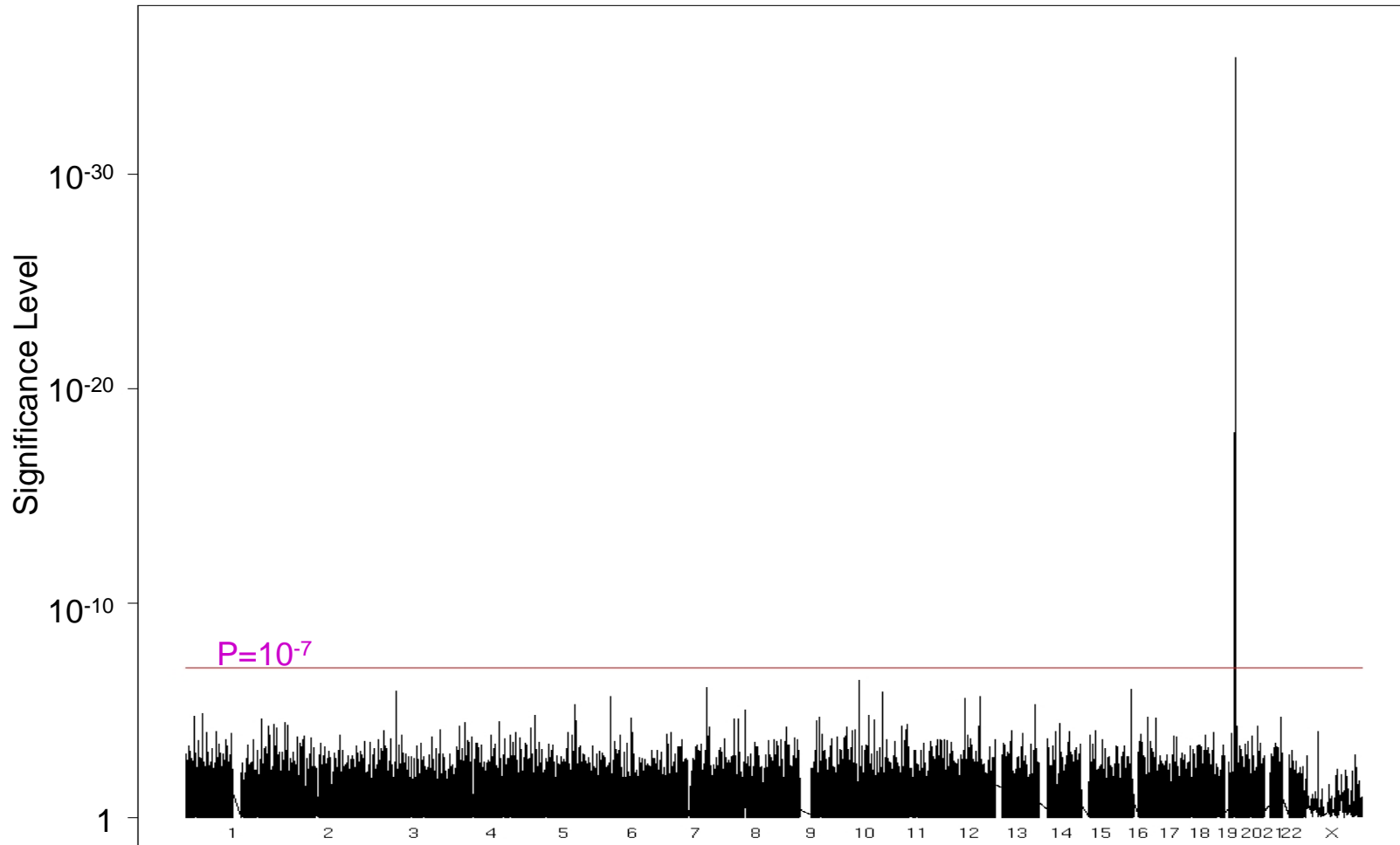


Genome-Wide Association Studies & Brain Imaging in the Study of Cognitive Aging & Alzheimer's Disease

Eric M. Reiman, M.D.

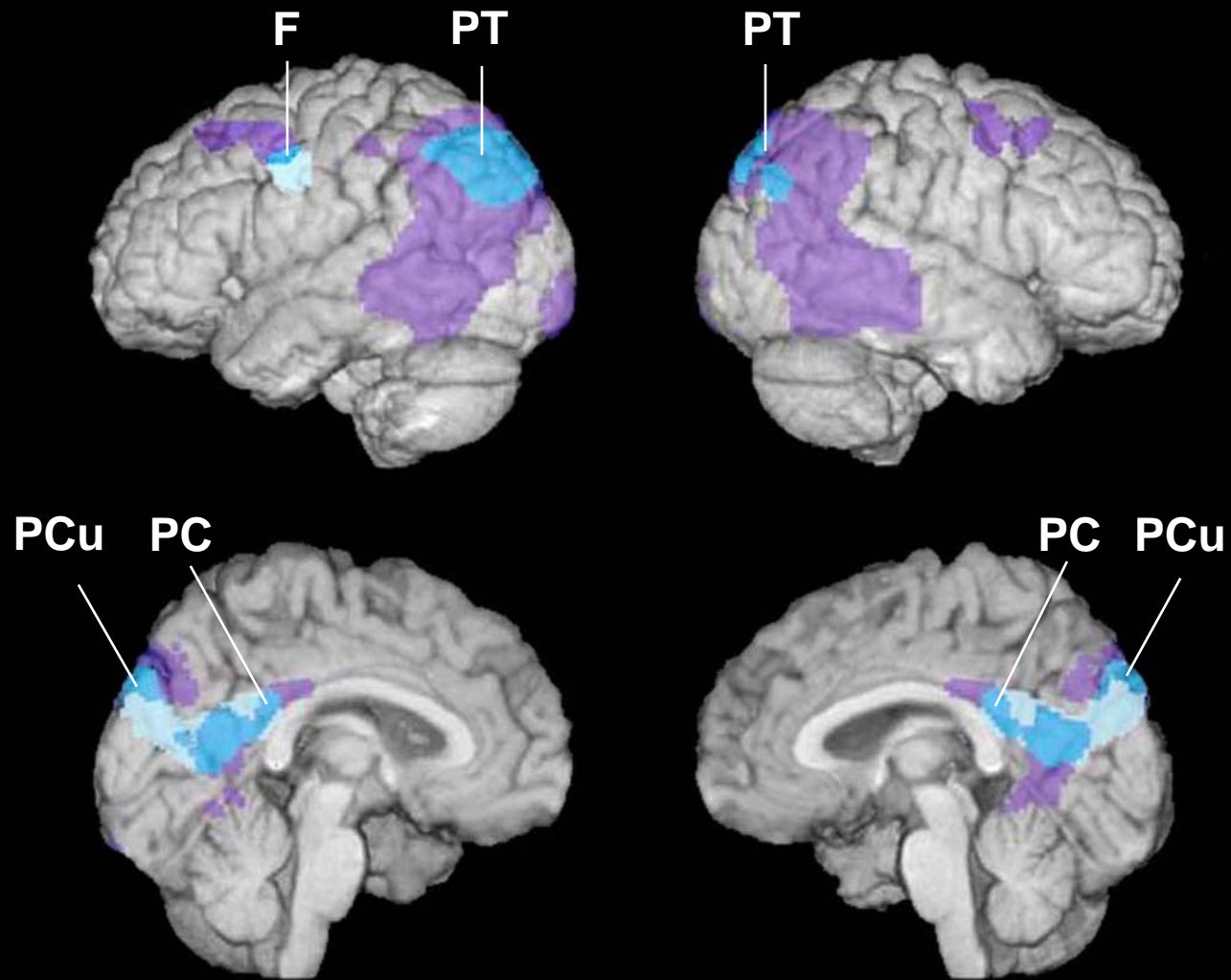
Banner Alzheimer's Institute
Translational Genomics Research Institute
University of Arizona
Arizona Alzheimer's Consortium
Phoenix, Arizona, USA

Entering the Era of Genome-Wide Association Studies: Implications for the Study of Cognition, AD & Aging



Papassotiropoulos et al, *Science* 2006; Reiman et al, *Neuron* 2007

Brain Imaging Endophenotypes & Therapeutic Surrogates for the Study of Alzheimer's Disease & Normal Aging



Reiman et al, *PNAS* 2005

Relevance of Fibrillar Amyloid Imaging to the Study of Aging, AD & their Interaction



Courtesy of Bill Klunk & Chet Mathis, University of Pittsburgh

Recommendations

1. Fulfill the promise of GWA studies in the study of aging, cognition & age-related disorders like AD
 - Improvements in technology & data analysis
 - Appropriate cognitive & biological measures
 - Extremely large samples & the consortia to acquire them
2. Fulfill the promise of brain imaging (& other biomarkers) in the study of aging, cognition & AD
 - Endophenotypes for the assessment of risk factors
 - Measures to differentiate the biological features, cognitive features & risk modifiers of “healthy” aging from those associated with age-related disorders
 - Therapeutic surrogates for the assessment of age-modifying, disease-slowing & disease-prevention therapies