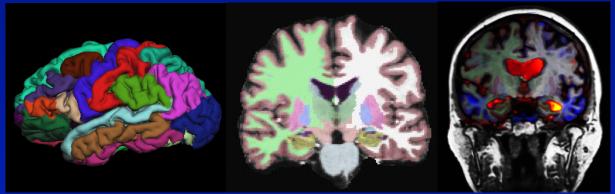
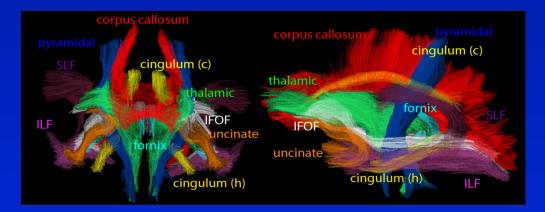
# Changes in Cognitive Function and Brain Health in Aging and Alzheimer's Disease

## Linda McEvoy

### lkmcevoy@ucsd.edu

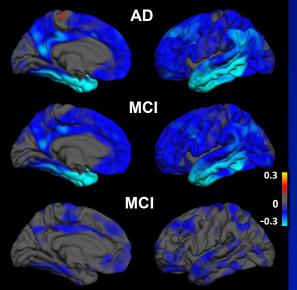


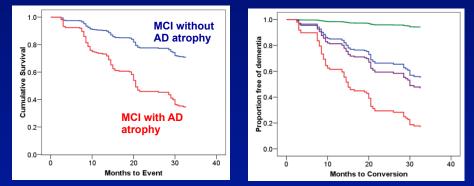
FreeSurfer & Quarc for looking at changes in cortical thickness in aging and dementia



AtlasTrack for looking at changes in white matter in aging

#### ADNI: The Alzheimer's Disease Neuroimaging Initiative

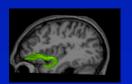




Presence of an Alzheimer's disease atrophy pattern in patients with mild cognitive impairment (MCI) is predictive of a more rapid course of decline to AD. (McEvoy et al. Radiology, 2009, 2011).

Prediction of dementia is improved by combining imaging results with other clinical or biomarker measures. (Heister et al. Neurol, 2012)

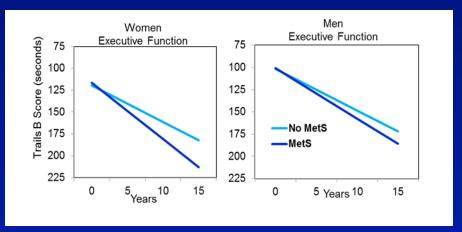
#### VETSA: The Vietnam Era Twin Study of Aging



Uncinate Fasciculus	
0.65	
0.64	
0.63	
P <sup>0.62</sup>	
0.61	
0.6 APOE e	4-
0.59 — APOE e	4+
0.58	
Normotensive Hyperte	ension

Hypertension is associated with changes in diffusivity in several white matter tracts; especially in men with the APOE  $\varepsilon$ 4 allele. These differences are apparent even in those who achieved good blood pressure control. (McEvoy et al. Hypertension, 2015).

### **<u>RBS</u>**: The Rancho Bernardo Study of Healthy Aging



Metabolic syndrome in women, but not men, was associated with steeper decline in executive function with age (McEvoy et al. Ann Epidem, 2012).

Currently obtaining structural brain scans and diffusion-weighted images on surviving participants of RBS to relate measures of health and lifestyle obtained over prior 20 years with late life brain health.