

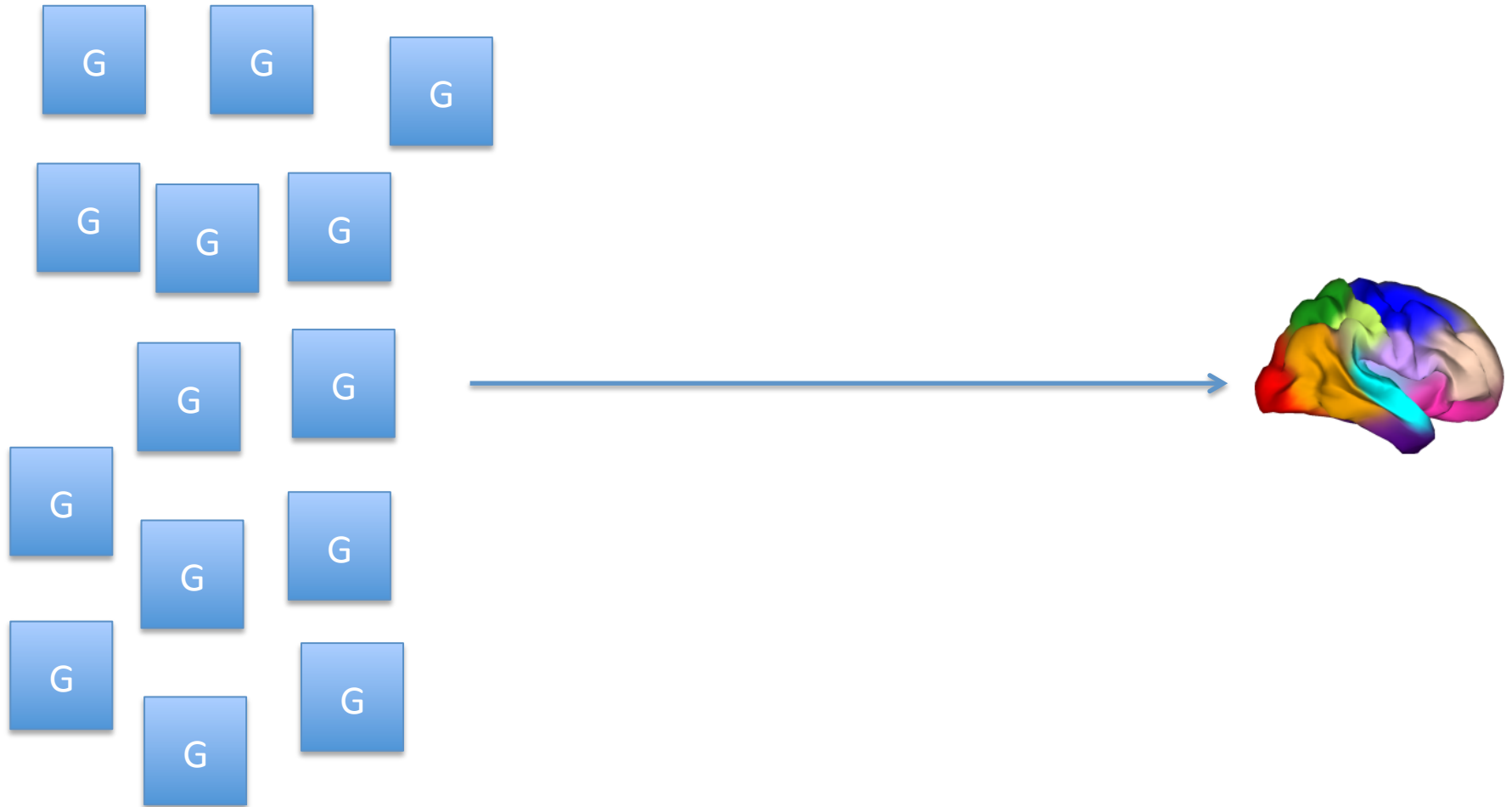
Identifying genetic basis of the human brain and neuropsychiatric disorders

Chi-Hua Chen

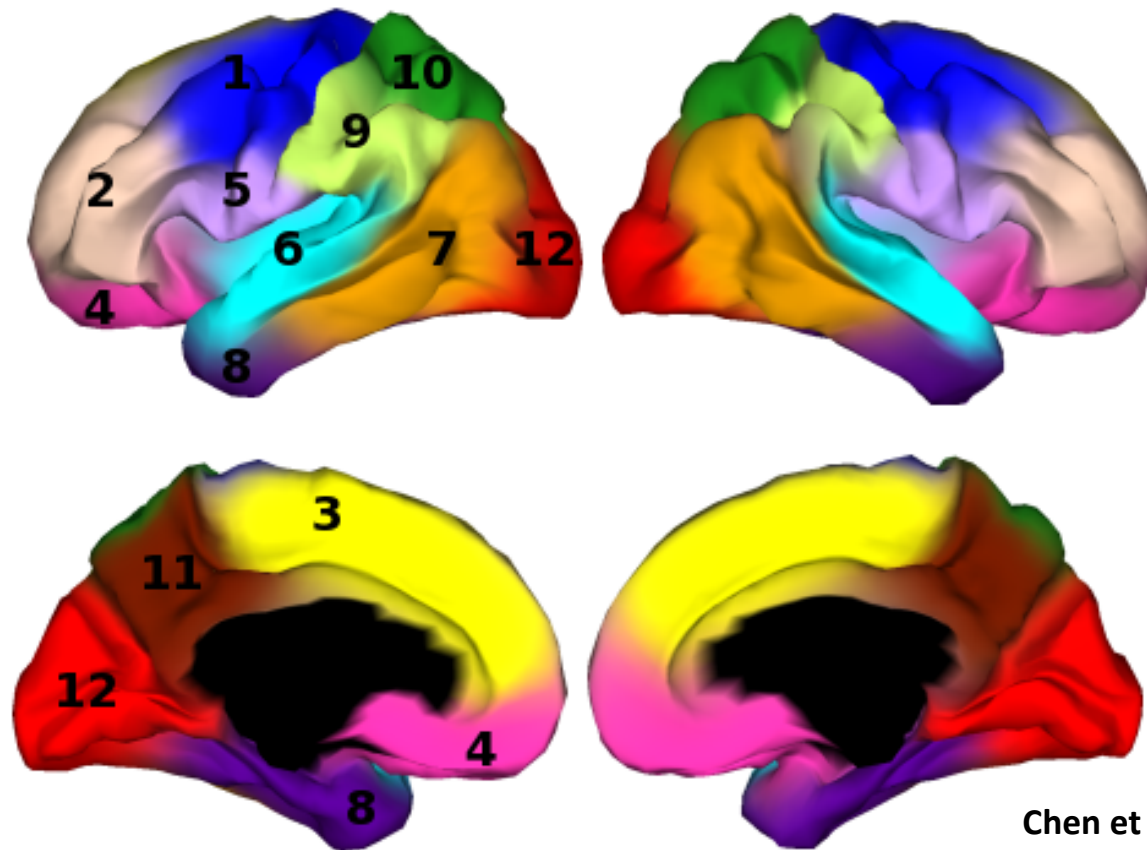
Department of Radiology

University of California San Diego

Genotype-phenotype mapping



Genetically defined cortical atlas



Chen et al., 2012, Science
Chen et al., 2014, PNAS

- Novel, not traditional, cortical divisions
- Genetically-defined
- Data-driven
- Divisions are neuroanatomically meaningful

Imaging genetic cohorts ($n = \sim 3,000$)

all with genome-wide genotypes and MRI

Sample	Size	Age	Ethnicity	Patient Categories
NCNG	326	20-80	Norwegian	N/A
HUNT	843	50-65	Norwegian	N/A
TOP	596	32-36	Norwegian	SCZ; BIP
PING	1250	3-20	All	N/A
ADNI	727	55-90	European descents	180. AD; 360 MCI
Total	3742			

Clustering of gene network in schizophrenia and bipolar disorder

