

## Template generation

### Multi-modal acquisition

#### Modalities

LSFM

FA

DWI

LSFM

MTR

ADC

Specimen 1

Specimen 2

Specimen 3

Specimen 4

Specimen 5

...

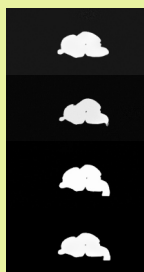
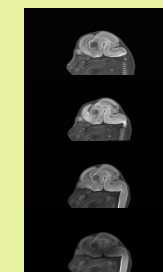
Specimen N

\* E15.5 illustrated

### Preprocessing

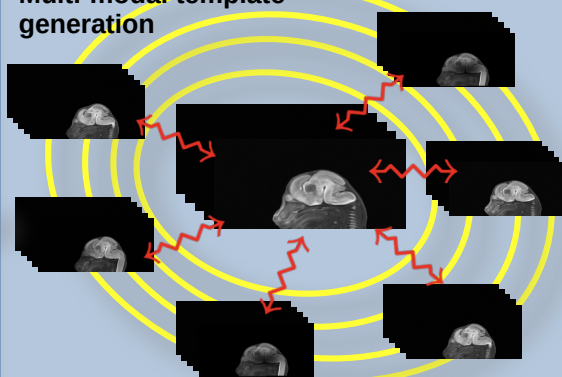
N4 + denoise

Brain extraction



ants.n4\_bias\_field\_correction  
ants.denoise\_image  
antspynet.mouse\_brain\_extraction

### Multi-modal template generation



ants.build\_template

## Template-based applications

### Template gene expression mapping

Original

Invert

B-spline interp.

Mapped histology

Gene B

FA template

Gene A

ants.registration  
ants.apply\_transforms  
ants.fit\_bspline\_object\_to\_scattered\_data

### Developmental velocity flow model

