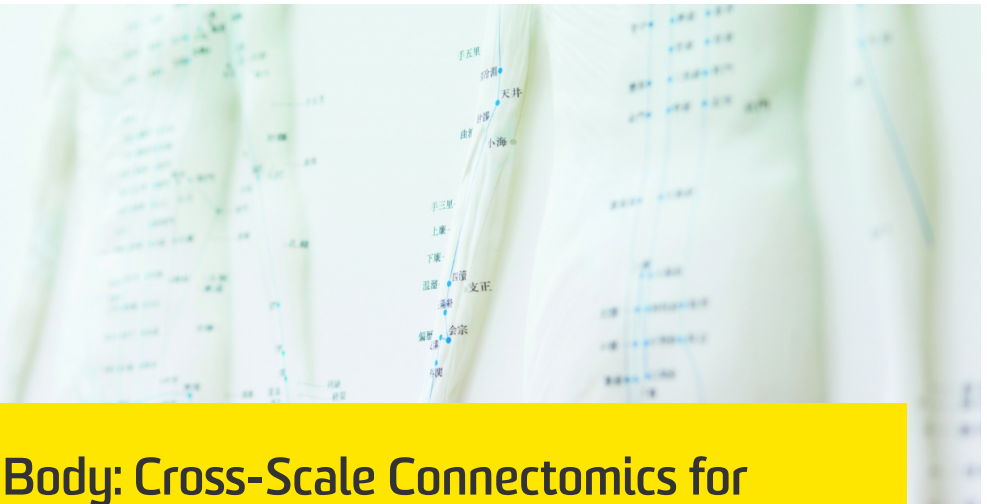




UNSW
SYDNEY



Google Maps of the Body: Cross-Scale Connectomics for Cellular Epidemiology and Next-Gen Diagnostics

Incorporating novel imaging technologies with correlative approaches, image rendering and interaction capabilities using geospatial tools, as well as image analytics that incorporate machine learning, to understand cellular epidemiology of disease and develop novel next generation diagnostics.

Competitive advantage

- World-leading technology to image and analyse subcellular to whole organ systems.

Impact

- Degenerative diseases show commonalities in the way they disrupt cellular and structural protein connectivities, from brain (dementia) to bone (osteoporosis) and joints (osteoarthritis)
- Connectomics approaches to understanding health and emergent disease throughout life provide a next generation approach to early diagnosis, cure and prevention of disease

Successful outcomes

- First and currently the largest map of a human tissue/organ in the world
- First application of machine learning to assess the health of the world's largest tissue map

Capabilities and facilities

- Led the collaboration with Zeiss since the first prototype multi-beam scanning electron microscopes for rapid throughput defect assessment in semiconductor wafers were applied to human tissues

Our partners

- Zeiss Microscopy
- TissuTex Pty. Ltd., NSW Australia
- Food and Drug Administration, National Institutes of Health, USA
- Hospital for Special Surgery New York, USA
- Cleveland Clinic, USA

More Information

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