

The Australian Centre for Quantitative Imaging 2023 Symposium

20 November 2023, 9:00 – 13:00 AWST

McCusker Auditorium, Harry Perkins Institute of Medical Research

QEI Medical Centre, 6 Verdun St, Nedlands WA

Hosted by the Australian Centre for Quantitative Imaging (ACQI), University of Western Australia

INTRODUCTION

- 9:00 – 9:05 Welcome
Dr Martin Ebert, ACQI Co-Director
- 9:05 – 9:10 Conference Introduction
Prof Anna Nowak, Deputy Vice Chancellor (Research), UWA

SYMPOSIUM SESSION 1 Chairperson: Nathaniel Barry

- 9:10 – 9:30 Radiopharmaceutical Quality Control – Practical Considerations and Development
Dr Joseph Ioppolo, WA NIF, The University of Western Australia
- 9:30 – 9:50 WA Cancer Registry – Collecting stage at diagnosis using Natural Language Processing & Machine Learning
Richard Trevithick, WA Cancer Registry, WA Health
- 9:50 – 10:10 MRI radiomics captures early treatment response in patient-derived organoid gynecological cancer mouse models
Dr Heidi Espedal, WA NIF, The University of Western Australia
- 10:10 – 10:30 Using Machine Learning to Predict Survival Amongst Oligoprogressing Prostate Cancer Patients with [⁶⁸Ga] Ga-PSMA-11 PET/CT Images
Dr Mikaela Dell'Oro, Research Fellow, The University of Western Australia
- 10:30 – 11:00 Australian Imaging Service: From NCRIS to MRFF and Overseas for Secure International Biomedical Research
Dr Ryan Sullivan, University of Sydney
- 11:00 – 11:30 Morning Tea

SYMPOSIUM SESSION 2 Chairperson: Mikaela Dell'Oro

- 11:30 – 11:50 Machine learning for advanced blood vessel disease assessment using bone density machines: you “aorta” look beyond the bones
A/Prof Joshua Lewis, Nutrition & Health Innovation Research Institute, ECU
- 11:50 – 12:10 Multi-modal MRI to personalise neurosurgical planning
Dr Sjoerd Vos, WA NIF, The University of Western Australia

- 12:10 – 12:30 Biomechanics as an image registration tool; applications to image-guided neurosurgery
Dr Karol Miller, School of Engineering, The University of Western Australia
- 12:30 – 13:00 AI in nuclear medicine: a physician's wish list
Prof Erik Verburg, Erasmus MC, Rotterdam, The Netherlands
- 13:00 – 14:00 ***Lunch***

The Australian Centre for Quantitative Imaging – Introductory Workshop – Understanding and implementing automatic segmentation networks to meet research and clinical needs

20 November 2023, 14:00 – 16:00 AWST

Seminar Room G24, Harry Perkins Institute of Medical Research

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WORKSHOP SCHEDULE

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|---------------|---|
| 14:00 – 14:40 | Introduction and Theory of AI for Automatic Segmentation
<i>Jake Kendrick, PhD Student, University of Western Australia</i> |
| 14:40 – 15:00 | Validating an Automatic Brain Segmentation Toolkit: Engaging with the Clinic to Enhance Research
<i>Nathaniel Barry, PhD Student, University of Western Australia</i> |
| 15:00 – 15:30 | Real World Clinical Use of AI Segmentation using PET/CT
<i>Nick Reynders, Scan Processing Manager, AIQ Solutions</i> |
| 15:30 – 16:00 | Clinical Implementation of AI Autocontouring
<i>Brani Rusanov, ROMP Registrar and PhD Student, University of Western Australia</i> |