ACPSEM
CPD Endorsed Activity

THE UNIVERSITY OF SYDNEY
School of Physics

# MedPhys22

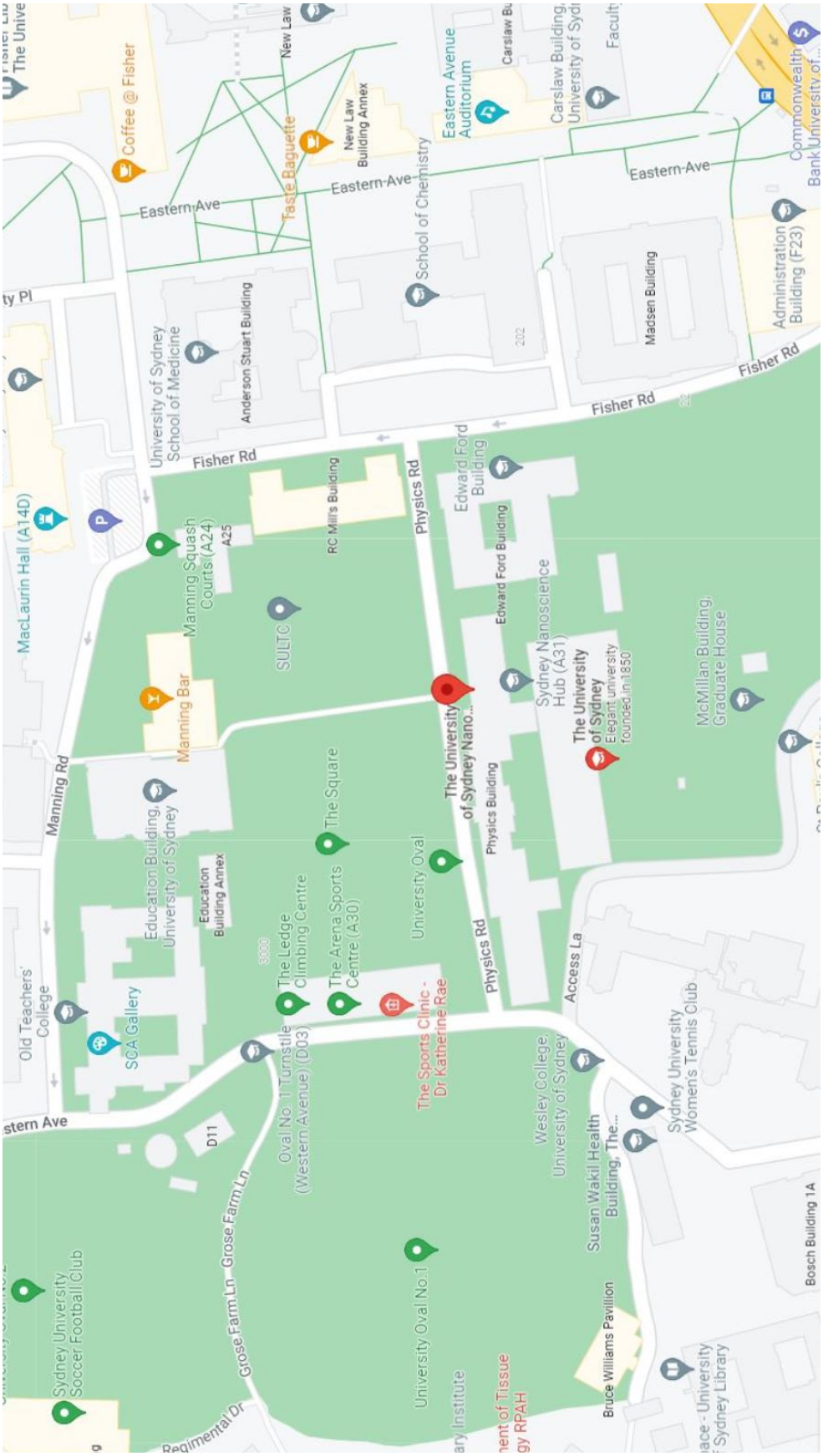
The 17th Student Research and Education Symposium of the

NSW/ACT Branch of the ACPSEM

**Thursday 1st December 2022, 8:40am – 5:00pm**

**Kindly sponsored by:**






University of Sydney, Messel lecture theatre, in the Nanoscience Hub A31 (behind the Physics Building) located on the Camperdown Campus. The theatre can be found by going through the main entrance of A31 from the exterior staircase outside the teaching wing of the building. The theatre is directly to the left upon entering the building

PROGRAM – MedPhys22
1st December 2022

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| **8:40 – 9:00** | | **Registration / Assemble judging committee & session 1 speakers** |
| **9:00 – 9:10** | | **Opening Remarks: Zoe Moutrie and Annette Haworth** |
| **9:10 – 10:10** | | **Session One** |
| | | **A Computational Investigation to the Radiobiological Effects of Secondary Particles in Scanning Beam Proton Therapy** |
| 9:10 – 9:22 | P1 | Michael Lloyd (University of Sydney) |
| | | **Determining internal anatomy replan triggers for plan adaptation of cervix external beam radiotherapy using MRI** |
| 9:22 – 9:34 | P2 | Rhianna Brown (University of Wollongong) |
| | | **The effect of source-to-surface distance on surface skin dose in a high field inline MRI-Linac System** |
| 9:34 – 9:46 | P3 | Madiha Tai (University of Wollongong) |
| | | **Augmentation of CTVs contours for validation of an automated QA tool** |
| 9:46 – 9:58 | P4 | Phil Chlap (University of New South Wales) |
| | | **Using System Theoretic Process Analysis to Design a Commissioning Procedure for MLC tracking** |
| 9:58 – 10:10 | P5 | Jonathan Hindmarsh (University of Sydney) |
| **10:10 – 10:30** | | **Short (morning tea) break 1** |
| **10:30 – 11:30** | | **Session Two** |
| | | **Multi-institutional investigation into robustness of multi-target stereotactic radiosurgery plans** |
| 10:30 – 10:42 | P6 | Lauren Pudsey (University of Wollongong) |
| | | **Quantitative MRI Assessment of Glioblastoma Treatment Response Using Radiomics** |
| 10:42 – 10:54 | P7 | Philip Martin (University of Wollongong) |
| | | **Applying Multi-Modal Federated Deep Learning in Head and Neck Cancer Survival Outcome Prediction** |
| 10:54 – 11:06 | P8 | Daniel Al Mouiee (University of New South Wales) |
| | | **Developing quantitative imaging biomarkers of treatment response in prostate cancer** |
| 11:06 – 11:18 | P9 | Yu-Feng (Erin) Wang (University of Sydney) |
| | | **Development of patient and catheter specific error thresholds for High Dose Rate Prostate Brachytherapy** |
| 11:18 – 11:30 | P10 | Dylan Koprivec (University of Wollongong / Laval University) |
| **11:30 – 11:40** | | **Short morning break 2** |
| **11:40 – 12:40** | | **Session Three** |
| | | **An evaluation of 3D printed bolus for radiotherapy with megavoltage x-ray beams** |
| 11:40 – 11:52 | M1 | Chunsu Zhang (University of Sydney) |
| | | **Feasibility of using PLA-based 3D printed phantoms for small-field high-energy photon beam dosimetry** |
| 11:52 – 12:04 | M2 | Nicholas Arico (University of Sydney) |
| | | **Impact of Key Algorithm Parameters on the Accuracy of CT Ventilation Imaging** |
| 12:04 – 12:16 | M3 | Jeremy Lim (University of Sydney) |
| | | **Treatment planning of spine and pelvis using SEMAR-corrected CT sets** |
| 12:16 – 12:28 | M4 | Daliya Ignatius (University of Western Australia) |
| | | **Dosimetric impact of DIBH monitoring inaccuracies and the potential for real-time dose-led management** |
| 12:28 – 12:40 | M5 | Natasha Gabay (University of Sydney) |
| **12:40– 1:30** | | **Lunch** |

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| | | ***Student Prize (PhD) Committee Meeting*** |
| **1:30 – 2:30** | | **Session Four** |
| | | **Radiation Safety Education and Training in Medical and Allied Disciplines** |
| 1:30 – 1:42 | M6 | Madison Yeoh (University of Sydney) |
| | | **HDR prostate brachytherapy treatment planning for erectile function preservation** |
| 1:42 – 1:54 | M7 | Vasilis Kondilis (University of Sydney) |
| | | **Assessing real-time liver motion monitoring on the Elekta unity MR-Linac** |
| 1:54 – 2:06 | M8 | Parmoun Daghigh (University of Sydney) |
| | | **Advanced Diffusion Modelling for Assessing Early Response to Prostate Cancer Radiation Therapy** |
| 2:06 – 2:18 | U1 | Sarah Thompson (University of Sydney) |
| | | **Monte Carlo simulation and experimental evaluation of Percentage Depth Dose produced by kV machine** |
| 2:18 – 2:30 | R1 | Febrian Kachina (Chris O'Brien Lifehouse) |
| **2:30 – 2:50** | | **Short afternoon break (Afternoon Tea)** |
| | | ***Student prize (Masters & Undergraduate) committee meeting*** |
| **2:50 – 4:26** | | **Session Five** |
| | | **Retrospective review of in-vivo dosimetry results for Total Body Irradiation patients** |
| 2:50 – 3:02 | R2 | Dale Roach (Liverpool Hospital) |
| | | **Evaluating action thresholds for in-vivo source tracking in HDR cervical brachytherapy** |
| 3:02 – 3:14 | R3 | Yashiv Dookie (Shoalhaven Cancer Care Centre) |
| | | **Investigation on performance of commercially available AI-based auto-segmentation systems in organs at risks (OARs) delineation** |
| 3:14 – 3:26 | R4 | Young woo Kim (Chris O'Brien Lifehouse) |
| | | **Diagnosis and resolution of recurring BGM carousel faults on a TrueBeam linac** |
| 3:26 – 3:38 | R5 | Emily Debrot (St George Hospital Cancer Care Centre) |
| | | **Radiation protection in $^{223}RaCl_2$ molecular radiation therapy of colostomy patients** |
| 3:38 – 3:50 | R6 | Anthony Baker (Nepean Hospital) |
| | | **3D Printed Equipment for Nuclear Medicine QC and Uses in Siemens xSPECT Bone Algorithm** |
| 3:50 – 4:02 | R7 | Tuyet Oanh (Tia) Lam (Gosford Hospital) |
| | | **Commissioning of SRS MapCHECK™: Validation of 2D silicon diode array for stereotactic radiotherapy patient specific quality assurance (PSQA)** |
| 4:02 – 4:14 | R8 | Ravneet Kaur (Orange Health Service) |
| | | **A framework for simulating realistic patient changes in radiotherapy imaging** |
| 4:14 – 4:26 | R9 | Rob Finnegan (Royal North Shore Hospital) |
| **4:26 – 4:50** | | ***Student Prize (Registrar) Committee Meeting*** |
| | | **Update from ACPSEM NSW/ACT Branch Chair** |
| **4:26 – 4:50** | | Zoe Moutrie |
| **4:50 – 5:00** | | **Prize giving and Close: Zoe Moutrie and Annette Haworth** |

P (PhD) | M (Master) | U (Undergrad) |R (Registrar)