

## Research Outputs on San Prostate Cancer Centre of Excellence June 2021 - March 2023

I am pleased to provide a report of the research output from the SAN Prostate Centre of Excellence in its first two years of operation.

The first research fellow appointed to the SAN PCOE was Dr Hadia Khanani from June 2021 through to February 2022. Her principle role was to drive our participation in two major imaging studies. Our ability to have successfully completed these studies would not have been possible without her. The PEDAL study was a collaboration with St Vincent's Hospital in Melbourne and with the completion of data collection and analysis, the outcome of journal submission to a high impact journal is awaited. The PEDAL study won the best research presentation by a doctor in training (from Melbourne) at the European Association of Urology Congress in 2022. Dr Khanani and several members of the PCOE team will be co-authors on the final manuscript. It is anticipated that there will be several additional manuscripts from secondary analyses. The second imaging study was the MP4 study which was a SAN project that has since been published in European Urology Open Science in January 2023. The MP4 Study was also a prize winning research presentation and was presented by Dr Anthony-Joe Nassour at the 2022 SIU Congress in Montreal. Both studies have made significant and recognised contributions to our knowledge of the role of PSMA PET/CT in the diagnostic pathway for prostate cancer.

From February 2022 through to February 2023, Dr Anika Jain and Dr Anthony-Joe Nassour joined the PCOE as urology research fellows. The increase in human resources allowed several additional new study concepts to be developed and taken to completion. It was an extraordinary effort from Drs Jain and Nassour to rapidly collect sufficient data to make possible multiple successful submissions to major international urology conferences.

Parallel to projects driven by our urology research fellows, a number of existing studies conducted came to fruition during 2021 to 2023 and these publications were attributed to the SAN Prostate COE. With 11 published manuscripts and a further 9 in journal peer review, this can be considered to be an extraordinary tangible research output.

It has been a privilege to serve as the inaugural Director of the SAN Prostate Centre of Excellence. The wider team of individuals participating and supporting research into prostatic diseases can all feel proud of what has been achieved. Finally, the success of the SAN PCOE could not have been possible without the support of the SAN Executive and the SAN Foundation.



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Director, SAN Prostate Centre of Excellence  
Professor of Urology, Australian National University

## Abstract Presentations Attributed to San PCOE

### 74<sup>th</sup> Urological Society of Australia and New Zealand Annual Scientific Meeting in Gold Coast, Queensland 25–28 June 2022

1. Update from the PEDAL trial: A prospective single arm paired comparison of ability to diagnose and locate prostate cancer between multiparametric MRI and 18FPSMA-PET/CT (Podium) Dr Vy Tran

### European Association of Urology Congress in Amsterdam, 1-4 July 2022

2. PEDAL trial: A prospective single arm paired comparison of ability to diagnose and locate prostate cancer between multiparametric MRI and 18FPSMA-PET/CT (Podium) Dr Vy Tran

### 19<sup>th</sup> Urological Association of Asia Congress in Sydney 5-8 Aug 2022

3. Determining the learning curve for transperineal biopsy under local anaesthetic (Podium Poster) Dr Anika Jain
4. Comparing accuracy of transperineal biopsy under local anaesthetic with PRECISION trial data (Podium Presentation) Dr Anika Jain
5. Australian Surgical Revision rates for Benign Prostatatic Obstruction (Podium Presentation) Dr Anika Jain
6. Impact of using different PSA assays on MRI eligibility (Podium Poster Presentation) Dr Anika Jain
7. Differences in PSA Results using Different PSA Assays (Podium Presentation) Dr Anika Jain
8. PET-MRI fusion Evaluation of High Grade mpMRI Abnormalities (Podium Poster Presentation) Dr Anika Jain
9. Effect of Uptake Time on 18F-DCFPyL PSMA PET/CT Maximum Standardised Uptake Value (Podium Presentation)
10. The Impact of Systemic Therapy Sequencing on Survival for Castration Resistant Prostate Cancer on Survival Trajectories – Real World Data (Podium Presentation) Dr Anthony-Joe Nassour
11. A Systematic Review and Meta-Analysis of the Rates and Risk Factors of Urological Cancer in Lynch Syndrome. (Podium Presentation) Dr Anthony-Joe Nassour
12. Diagnostic Value of an SUVmax Cutoff in Predicting Clinically Significant Prostate Cancer? (Podium Presentation) Dr Anthony-Joe Nassour
13. Robotic-assisted Excision of a Retropleural Schwannoma via a Transperitoneal Approach Without Thoracotomy (Podium Presentation) Dr Anthony-Joe Nassour



**39th World Congress of Endourology & Uro-Technology in San Diego 1-4 Oct 2022**

14. Impact of different PSA Assays on Multiparametric Magnetic Resonance Imaging Eligibility". (Moderated Poster ) Dr Anthony-Joe Nassour
15. The Effect of Different PSA Assays on Reported PSA Results: A retrospective Study (Moderated Poster) Dr Anthony-Joe Nassour

**42nd Congress of Société Internationale d'Urologie in Montreal Canada 9-13 Nov 2022**

16. Is the Maximum Standardised Uptake Cutoff of Value in Predicting Clinically Significant Prostate Cancer? (Moderated ePoster) Dr Anika Jain
17. Impact of Uptake Period on 18f-dcfpyl PSMA PET/CT Maximum Standardised Uptake Value (Unmoderated ePoster) Dr Anika Jain
18. The Rates and Risk Factors of Urological Cancer in Lynch Syndrome: a Systematic Review and Meta-analysis (Unmoderated ePoster) Dr Anika Jain
19. The Impact of Choice of Systemic Therapy for Castration Resistant Prostate Cancer on Survival Trajectories - Real World Data From the Australian Pharmaceutical Benefits Scheme (PBS) (Unmoderated ePoster) Dr Anika Jain
20. Comparison of PSA using Abbott Alinity and Siemens Atellica Assays (Moderated ePoster) Dr Anika Jain
21. Comparison of PSA using different assays and their impact on MRI eligibility (Moderated ePoster) Dr Anika Jain
22. Assessing the Experience Needed to Tolerably Perform transperineal biopsy under local anaesthetic (Moderated ePoster) Dr Anika Jain
23. Real World Revision Surgical Rates following Surgery for Benign Prostatic Obstruction in Australia (Moderated ePoster) Dr Anika Jain
24. MRI and PSMA PET Prior to Prostate Biopsy (Mp4 Study (Moderated ePoster) Dr Anthony-Joe Nassour - Prize winning presentation
25. Detection of Clinically Significant Prostate Cancer Using Transperineal Biopsy Under Local Anaesthetic. (Unmoderated Poster) Dr Anthony-Joe Nassour
26. The Role of PSMA PET in Active Surveillance (Unmoderated Poster) Dr Anthony-Joe Nassour
27. Surgical Revision Rates for Benign Prostatic Hyperplasia(Unmoderated poster) Dr Anthony-Joe Nassour



## Publications attributed to the San PCOE

### Published Manuscripts (March 2021 to March 2023)

1. **“Relative Risk of Bladder and Kidney Cancer in Lynch Syndrome: Systematic Review and Meta-Analysis”.** Nassour AJ, Jain A, Hui N, Siopis G, Symons J, Woo H. *Cancers (Basel)*. 2023 Jan 13;15(2):506. doi: 10.3390/cancers15020506. PMID: 36672455  
Impact Factor 6.575
2. **“Multiparametric Magnetic Resonance Imaging of the Prostate and Prostate-specific Membrane Positron Emission Tomography Prior to Prostate Biopsy (MP4 Study).”** Woo HH, Khanani H, Thompson NJ, Sorensen BJ, Baskaranathan S, Bergersen P, Chalasani V, Dean T, Dias M, Symons J, Wines M, Jain A, Nassour AJ, Tarlinton LC. *Eur Urol Open Sci*. 2022 Dec 16;47:119-125. doi: 10.1016/j.euros.2022.11.012. eCollection 2023 Jan. PMID: 36601041  
Impact Factor 3.000
3. **PEDAL protocol: a prospective single-arm paired comparison of multiparametric MRI and 18F-DCPFyl PSMA PET/CT to diagnose prostate cancer.** Tran V, Hong A, Sutherland T, Taubman K, Lee SF, Lenaghan D, Sethi K, Corcoran NM, Lawrentschuk N, Woo H, Tarlinton L, Bolton D, Spelman T, Thomas L, Booth R, Hegarty J, Perry E, Wong LM. *BMJ Open*. 2022 Sep 19;12(9):e061815. doi: 10.1136/bmjopen-2022-061815. PMID: 36123093  
Impact Factor 3.007
4. **“Low-grade prostate cancer should still be labelled cancer.”** Iczkowski KA, Molina M, Egevad L, Bostwick DG, van Leenders GJLH, La Rosa FG, van der Kwast T, Berney DM, Evans AJ, Wheeler TM, Leite KRM, Samaratunga H, Srigley J, Varma M, Tsuzuki T, Lucia MS, Crawford ED, Harris RG, Stricker P, Lawrentschuk N, Woo HH, Fleshner NE, Shore ND, Yaxley J, Bratt O, Wiklund P, Roberts M, Cheng L, Delahunt B. *BJU Int*. 2022 Dec;130(6):741-743. doi: 10.1111/bju.15886. Epub 2022 Sep 20. PMID: 36083240  
Impact Factor 5.969
5. **“The EXPANDER-1 trial: introduction of the novel Urocross™ Expander System for treatment of lower urinary tract symptoms (LUTS) secondary to benign prostatic hyperplasia (BPH).”** Woo HH, Huang CP, Huang WJ, Chang YH, Lien CS, Chkhotua A, Elterman DS. *Prostate Cancer Prostatic Dis*. 2022 Sep;25(3):576-582. doi: 10.1038/s41391-022-00548-z. Epub 2022 May 31. PMID: 35641601  
Impact Factor 5.465
6. **“Is there an epidemic of men medically unfit to have a transurethral resection of the prostate?”** Garcia C, Woo HH. *ANZ J Surg*. 2022 May;92(5):1286-1287. doi: 10.1111/ans.1756  
PMID: 35534997  
Impact Factor 2.025



7. **“Pain-free TRUS B’: a phase 3 double-blind placebo-controlled randomized trial of methoxyflurane with periprostatic local anaesthesia to reduce the discomfort of transrectal ultrasonography-guided prostate biopsy (ANZUP 1501).”** Hayne D, Grummet J, Espinoza D, McCombie SP, Chalasani V, Ford KS, Frydenberg M, Gilling P, Gordon B, Hawks C, Konstantatos A, Martin AJ, Nixon A, O'Brien C, Patel MI, Sengupta S, Shahbaz S, Subramaniam S, Williams S, Woo HH, Stockler MR, Davis ID, Buchan N; Australian and New Zealand Urogenital and Prostate Cancer Trials Group (ANZUP). *BJU Int.* 2022 May;129(5):591-600. doi: 10.1111/bju.15552. Epub 2021 Jul 30. PMID: 34273231  
Impact Factor 5.969
8. **The UroLift implant: mechanism behind rapid and durable relief from prostatic obstruction.** Roehrborn CG, Chin PT, Woo HH. *Prostate Cancer Prostatic Dis.* 2022 Mar;25(1):79-85. doi: 10.1038/s41391-021-00434-0. Epub 2021 Aug 6. PMID: 34363010  
Impact Factor 5.465
9. **The Additive Diagnostic Value of Prostate-specific Membrane Antigen Positron Emission Tomography Computed Tomography to Multiparametric Magnetic Resonance Imaging Triage in the Diagnosis of Prostate Cancer (PRIMARY): A Prospective Multicentre Study.** Emmett L, Buteau J, Papa N, Moon D, Thompson J, Roberts MJ, Rasiah K, Pattison DA, Yaxley J, Thomas P, Hutton AC, Agrawal S, Amin A, Blazevski A, Chalasani V, Ho B, Nguyen A, Liu V, Lee J, Sheehan-Dare G, Kooner R, Coughlin G, Chan L, Cusick T, Namdarian B, Kapoor J, Alghazo O, Woo HH, Lawrentschuk N, Murphy D, Hofman MS, Stricker P. *Eur Urol.* 2021 Dec;80(6):682-689. doi: 10.1016/j.eururo.2021.08.002. Epub 2021 Aug 28. PMID: 34465492  
Impact Factor 24.344
10. **Use of multiparametric magnetic resonance imaging (mpMRI) in active surveillance for low-risk prostate cancer: a scoping review on the benefits and harm of mpMRI in different biopsy scenarios.** Chiam K, Carle C, Hughes S, Kench JG, Woo HH, Lord S, Smith DP. *Prostate Cancer Prostatic Dis.* 2021 Sep;24(3):662-673. doi: 10.1038/s41391-021-00320-9. Epub 2021 Mar 2. PMID: 33654249  
Impact Factor 5.465
11. **The Effect of Different Assays on PSA Testing** Jain A, Nassour A-J, Symons J, Chung A, Goolam A, Wines M, Chalasani V, Dias M, Bala I, Collins R, Woo HH. *BJU Int.* 2023 Mar 6. doi: 10.1111/bju.15958. PMID: 36877934  
Impact Factor 5.969



**Currently submitted and in peer review with journals**

- 1. Enzalutamide Improves Metastasis-free Survival in Recurrent Prostate Cancer** Freedland SJ, de Almeida Luz M, De Giorgi U, Gleave M, Gotto GT, Haas GP, Kim CS, Ramirez-Backhaus M, Rannikko A, Tarazi J, Sridharan S, Sugg J, Tang Y, Tutrone Jr RF, Venugopal B, Villers A, Woo HH, Zohren F, Shore ND. Submitted to New England Journal of Medicine March 2023  
Impact Factor 176.079
- 2. 18F-PSMA PET/CT or MRI to diagnose and localise prostate cancer. A prospective single arm paired comparison (PEDAL).**Lih-Ming Wong, Tom Sutherland, Elisa Perry, Tim Spelman, Vy Tran, Niall M Corcoran, Henry Woo, Nathan Lawrentschuk, Daniel Lenaghan, Nicholas Buchan, Kevin Bax, James Symons, Ahmed Saeed Goolam, Justin Hegarty, Lauren Thomas, Khanani, Su-Faye Lee, Kim Taubman, Lisa Tarlinton, Michael Ng Submitted to European Urology  
Impact Factor 24.344
- 3. Expanding The Role of PSMA PET in Active Surveillance** Anika Jain, Anthony-Joe Nassour, Thomas Dean, Imogen Patterson, Lisa Tarlinton, Lawrence Kim, Henry Woo Submitted to BMC Urology. Revisions submitted January 2023.  
Impact Factor 2.090
- 4. Australian Surgical Revision Rate for Benign Prostatic Obstruction** Anika Jain, Anthony-Joe Nassour, Hadia Khannani, Michael. P Wines, Venu Chalasani, Phillip Katelaris, Philip Bergersen, James. L Symons, Henry Woo Submitted to BJUI January 2023.  
Impact Factor 5.969
- 5. Understanding the patient experience of specialised prostate imaging modalities (mpMRI and PET/CT)** Cromie TMT, Thompson NJ, Tarlinton LC, Sorensen BJ, Woo HH Revision submitted to BJUI Compass on February 2023 BCO2-2022-137  
Impact Factor 0.9
- 6. Six- and twelve-month outcomes of a prospective trial of water vapor thermal therapy for treatment of lower urinary tract symptoms due to benign prostatic hyperplasia in subjects with large prostates** Henry Woo, Richard Levin, Christopher Cantrill, Shaw Zhou, Donald Neff, Mark Sutton, James Bailen, Michael Darson, John Horgan, Paul Zantek, Robyn Marty-Roix Submitted to European Urology in February 2023  
Impact Factor 24.344



7. **Salvage 177Lu-PSMA for PSA Biochemical Failure After Radical Prostatectomy for High-Risk Prostate Cancer (SLAP Protocol): Single-Arm Prospective Pilot Study** Nassour AJ, Jain A, Siopis G, Sorensen B, Saad L, Marx G, Tarlinton L, Szeto E, Woo H Submitted to BMJ Open in February 2023  
Impact Factor 3.007
8. **Retreatment Rates and Postprocedural Complications are Higher than Expected after BPH Surgeries: A US Healthcare Claims and Utilization Study** Steve Kaplan, Ronald Kaufman, Tom Mueller, Dean Elterman, Bilal Chughtai, Daniel Rukstalis, Henry Woo, Claus Roehrborn Submitted to JAMA Surgery in February 2023  
Impact Factor 16.681
9. **A Practical Guide For The Use Of Apalutamide For Non- Metastatic Castration-Resistant Prostate Cancer In Australia** Gavin Marx, Simon Chowdhury, Laurence Krieger, Elizabeth Hovey, Jeremy Shapiro, Ben Tran, Hsiang Tan, Siobhan Ng, Henry H. Woo Submitted to Asia Pacific Journal of Clinical Oncology March 2023  
Impact Factor 2.601

#### Data collection complete and currently under preparation for journal submission

1. Effect of Uptake Time on 18F-DCFPyL PSMA PET/CT Maximum Standardised Uptake Value
2. The Impact of Choice of Systemic Therapy for Castration Resistant Prostate Cancer on Survival Trajectories - Real World Data From the Australian Pharmaceutical Benefits Scheme (PBS)
3. Experience with targeted transperineal biopsy under local anaesthetic
4. BIOLLEN-PC: A study to establish the feasibility of Biolen® for the local delivery of bicalutamide in patients with prostate cancer

#### Ethics Approved Research Projects in Process

5. Incidental findings on PSMA PET/CT performed for staging of prostate cancer
6. SLAP Study – Salvage Lutetium After Radical Prostatectomy in high risk prostate cancer
7. Water Vapor Thermotherapy vs. Combination Pharmacotherapy for Symptomatic Benign Prostatic Hyperplasia Refractory to Alpha Blocker Monotherapy in Sexually Active Men: A Multicenter Randomized Controlled Trial (VAPEUR RCT)
8. Impact of pre-treatment with ibuprofen and paracetamol on pain scores associated with targeted transperineal prostate biopsies.