

2013

RESEARCH

REPORT

EASTERN HEALTH
CLINICAL SCHOOL

EASTERN CLINICAL
RESEARCH UNIT

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Eastern Health Clinical School (EHCS) oversees training within Eastern Health of medical students from Monash University and Deakin University; coordinates Monash University research and higher degree students; is the conduit through which Turning Point links to the university; and coordinates clinical trials within Eastern Health for a number of the trials-active clinical units through the Eastern Clinical Research Unit (ECRU).

ECRU works closely with the Eastern Health Office for Research and Ethics. ECRU provides an overarching research governance structure, ensuring the highest quality of clinical research and best protection for trial participants. ECRU brings together researchers from multiple disciplines, providing them with necessary infrastructure support and systems that ensure confidence in the quality of work achieved. EHCS contributes substantial resources to ECRU to ensure that this work can continue in a seamless fashion to ensure that the capacity for research, both industry-sponsored and investigator-initiated, can continue to grow.

ECRU provides opportunities for training of clinicians and other staff, and additional support to units with fewer resources. Clinical research through Eastern Health and ECRU is of a very high standard and is highly regarded and sought after by trial sponsors.

EHCS has a wet laboratory program consisting primarily of researchers within nephrology and oncology. The nephrology group, led by Professor Lawrie McMahon, Professor Steve Holt and Ed Smith, works on questions relating to vascular calcification and inflammation. The uro-oncology group, led by Professor Ian Davis, performs basic and translational research in prostate cancer and moved into the laboratories in June 2013.

There continues to be growth in research through the EHCS relating to medical education, led by Associate Professor Jenepher Martin. The EHCS Medical Students Program includes a range of research projects focusing on medical education including the effects of peer involvement in learning, and the introduction of trained patients as tutors (see EHCS Medical Students Program report for further details). This research is yielding interesting results and has been rewarded with a Monash University grant.

Program Director Professor Ian Davis

Funding/Grants

Development of novel sex steroid-based PET tracers for prostate cancer Prostate Cancer Foundation of Australia New Directions Development Award. Principal investigator: **Davis ID**, Co-investigators: Scott AM, Risbridger GP, **Sluka P**. \$213,000 over two years (2012–2013)

LI-COR Odyssey CLx Infrared Imaging System Prostate Cancer Foundation of Australia Movember Equipment Grant (EG 0612) **Davis ID**. \$32,000 (2013).

Projects in progress

Projects in progress by the unit during the course of the past year have included:

URO-ONCOLOGY LABORATORY

Prostate cancer microenvironment

Lead researcher: **Davis ID**. Co-investigators: **Sluka P**, **Wardan H**. This project involves studying the factors associated with the tendency of prostate cancer more likely to spread to bones. The research involves studying samples of prostate cancer or non-cancerous prostate tissue removed from patients at the time of surgery.

Prostate cancer and the immune system

Lead researcher: **Davis ID**. Co-investigators: **Sluka P**, **Wardan H**. The immune system has effects on various cancers including prostate cancer. This project studies immune cells within the prostate tissue itself and comparing with immune responses in blood. Evidence to date has identified that the immune response is suppressed inside the cancer, giving the cancer the opportunity to grow.

Sex steroids and immune function

Lead researcher: **Davis ID**. Co-investigators: **Sluka P**, **Wardan H**. Prostate cancer is often treated with hormones (sex steroids). Changes in immune function are known to occur in men with prostate cancer treated like this. Research outcomes have identified that there are direct effects of sex steroids on immune cells with implications for how prostate cancer might be treated in the future.

Publications for period 1 July 2012 – 30 June 2013

JOURNALS

Published

Ebert LM, MacRaild SE, Zanker D, **Davis ID**, Cebon J, Chen W. A cancer vaccine induces expansion of NY-ESO-1-specific regulatory T cells in patients with advanced melanoma. *PLoS One*. 2012; 7(10):e48424. (doi: 10.1371/journal.pone.0048424). Epub 2012 Oct 26.

Klein O, Ebert LM, Zanker D, Tan BS, Fucikova J, Behren A, **Davis ID**, Maraskovsky E, Chen W, Cebon J. Flt3 ligand expands FoxP3+CD4+ regulatory T cells in human subjects. *Eur J Immunol*. 2013; Feb 43(2):533–9. (doi: 10.1002/eji.201242603). Epub 2012 Dec 5.

Davis ID, Chew DPB. Clinical effectiveness research: a critical need for health sector research governance capacity. *The Medical Journal of Australia*. 2013; Vol 198. No. 4. 191–192. (DOI: 0.5694/mja12.11144)

Houghton B, Chalasani V, Hayne H, Grimison G, Brown C, Patel M, **Davis ID**, Stockler M. Intravesical chemotherapy plus BCG in non-muscle invasive bladder cancer: A systematic review with meta-analysis. *BJU International*. 2013; May, 111(6):977–83. (doi: 10.1111/j.1464-410X.2012.11390). Epub 2012 Dec 17.

Olver IN, Grimison P, Chatfield M, Stockler MR, Toner GC, GebSKI V, Harrup R, Underhill C, Kichenadasse G, Singhal N, **Davis ID**, Boland A, McDonald A, Thomson D. Results of a seven-day aprepitant schedule for the prevention of nausea and vomiting in five-day cisplatin-based germ cell tumour chemotherapy. *Supportive Care in Cancer*. 2013; 21:1561–1568 (DOI 10.1007/s00520-012-1696-0). Epub 2012 Dec 30. PMID: 23274926.

Sternberg CN, Hawkins RE, Wagstaff J, Salman P, Mardiak J, Barrios CH, Zarba JJ, Gladkov OA, Lee E, Szczylik C, McCann L, Rubin SD, Chen M, **Davis ID**. A randomised, double-blind, phase III study of pazopanib in patients with advanced and/or metastatic renal cell carcinoma: Final overall survival results and safety update. *European Journal of Cancer*. 2013; Apr, 49 (6):1287–96.

(doi:10.1016/j.ejca.2012.12.010). Epub 2013 Jan 12.

Behren A, Anaka M, Lo PH, Vella LJ, **Davis ID**, Catimel J, Cardwell T, Gedye C, Hudson C, Stan R, Cebon J. The Ludwig Institute for Cancer Research Melbourne Melanoma Cell Line Panel. *Pigment Cell Melanoma Res*. 2013; Mar 21 (doi: 10.1111/pcmr.12097). E-pub ahead of print

Evans SM, Millar JL, **Davis ID**, Murphy D, Bolton DM, Giles G, Frydenberg M, Andianopoulos N, Wood J, Frauman AG, Costello AJ, McNeil JJ. Patterns of Care for Men Diagnosed with Prostate Cancer in Victoria from 2008 to 2011. *Medical Journal of Australia* Vol 198. No. 10 (2013): 540–5. DOI: 10.5694/mja12.11241.

Davis ID, Lynam J, **Sluka P**. Prostate Cancer. *Cancer Forum*. 2013; March 37(1): 56–58.

Grimison P, Chatfield M, Houghton B, Toner G, **Davis ID**, Martin J, Hovey E, Stockler M. Patterns of management and surveillance imaging for stage I testicular cancer amongst medical oncologists in Australia. *BJU International*. Volume 112, Issue 2, article first published online: 25 Jun 2013. doi:10.1111/bju.12221.

Zhao Q, Caballero OL, **Davis ID**, Jonasch E, Tamboli P, Yung WKA, Weinstein JN, Shaw K for the TCGA research network, Strausberg RL and Yao J. Tumour-specific isoform switch of the fibroblast growth factor receptor 2 underlies the mesenchymal and malignant phenotypes of clear cell renal cell carcinomas. *Clinical Cancer Research*. 2013; 19: 2460–2472.

Evans SM, Millar JL, Wood J, **Davis ID**, Bolton DM, Giles G, Frydenberg M, Frauman AG, Costello AJ, McNeil JJ. The Prostate Cancer Registry: monitoring patterns and quality of care for men diagnosed with prostate cancer. *BJU International*. 2013; 111: E158–E166.

Trapani JA, Thia KY, Andrews M, **Davis ID**, Gedye C, Parente P, Svobodova S, Chia J, Browne K, Campbell IG, Phillips WA, Voskoboinik I, Cebon JS. Human perforin mutations and susceptibility to multiple primary cancers. *Oncoimmunology*. 2013;

Apr 1;2(4):e24185 (PMID:23734337[PubMed] PMID:PMC3654607).

PEER REVIEW LETTERS

Au-Yeung G, Aly A, Bui A, Vermeltfoort C and Davis ID. Uptake of oncology multidisciplinary meeting recommendations [peer-reviewed letter]. *Medical Journal of Australia*. 2012; 196(1): 36–37.

Liew MS, Au-Yeung G and Davis ID. Pathologic responses to gemcitabine/ platinum-based neoadjuvant chemotherapy for muscle-invasive urothelial cancer [peer-reviewed letter]. *Asia Pacific Journal of Clinical Oncology*. 2012; 8: 101–102.

Conference including proceedings, papers, poster

INTERNATIONAL

Ciprotti M, Davis ID, Pook DW, Lee FT, Lee ST, O’Keefe GJ, Tochon-Danguy H, Smyth FE, Hopkins W, Scott AM. A pilot study of the safety, efficiency and effects on functional imaging of the combination of cG250 and sunitinib in patients (pts) with advanced renal cell carcinoma (RCC). 24th EORTC–NCI–AACR Symposium on Molecular Targets and Cancer Therapeutics. Dublin, Ireland, November 2012.

Tafreshi A, Thientosapol E, Liew MS, Guo Y, Quaggiotto M, Boyer M, Davis ID. Efficacy of sorafenib in advanced renal cell carcinoma (RCC) independent of prior treatment, histology, or prognostic group. ASCO Genitourinary Cancer Symposium. Orlando, Florida, February 2013.

Millar JL, Evans SM, Frydenberg M, Murphy DG, Bolton DM, Giled GG, Davis ID. Quality-of-life outcomes for prostate cancer treatment in Australia. ASCO Genitourinary Cancer Symposium. Orlando, Florida, February 2013.

Rao K, Manya K, Azad A, Davis I, Lawrentschuk N, Bolton D, Sengupta S. Impact of a multi-disciplinary meeting on clinical decision-making. AUA Conference. San Diego, California, May 2013.

NATIONAL

Fournier M, Grimison P, Stockler M, Whitford H, Toner G, Thomson D, Davis I, Hanning F, Underhill C, Clingan P, McDonald A, Boland A, Olver I and ANZUP Cancer Trials Group. Lower levels of serum testosterone, quality of life and treatment for testicular cancer: a prospective cohort study. ANZUP Annual Scientific Meeting. Sydney, July 2012.

Liew MS, Tafreshi A, Eapen R, Davis ID, Sengupta S. Peri-operative chemotherapy improves relapse-free survival for urothelial carcinoma of the bladder treated by radical cystectomy, but remains under-utilised in an Australian tertiary referral institution. Medical Oncology Group of Australia Annual Scientific Meeting. Brisbane, August 2012.

Tafreshi A, Thientosapol E, Liew MS, Guo Y, Quaggiotto M, Boyer M, Davis, I. Efficacy of sorafenib in advanced renal cell carcinoma (RCC) independent of prior treatment, histology or prognostic group. ANZUP Annual Scientific Meeting. Sydney, July 2012; also presented at Medical Oncology Group of Australia Annual Scientific Meeting. Brisbane, August 2012.

Tafreshi A, Sengupta S, Davis ID, Liew MS, Eapen R. Peri-operative chemotherapy improves relapse-free survival for urothelial carcinoma of the bladder treated by radical cystectomy, but remains under-utilised in an Australian tertiary referral institution. COSA Annual Scientific Meeting. Brisbane, November 2012.

LOCAL

Saxena M, Nightingale R, Davis ID. Sex steroid receptor signalling and immune function. Austin LifeSciences Research Week. Melbourne, October 2012.

Nightingale R, Saxena M, Whitty G, Davis ID. Sex steroid receptor signalling and immune function. Lorne Cancer Conference. Lorne, February 2013.

Sengupta S, Davis I, Lim Joon D, Bolton D & the Prostate Cancer Registry. Are we over-diagnosing and over-treating prostate cancer. USANZ Conference. Melbourne, April 2013.

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ACCESSING PROGRAM ACTIVITY REPORTS

Eastern Health is committed to building a culture of research and ensuring such research is embedded in everyday clinical practice. Eastern Health contributes to local, national and international research activity. This document forms part of the broader sixth annual *2013 Eastern Health Research Report* reflecting the high-calibre research, commitment and strength of research programs across Eastern Health. A hard copy of the complete *2013 Research Report* including program activity reports is available by contacting The Office of Research & Ethics on **9895 9551** or via download from www.easternhealth.org.au

Readers note: Where projects are collaborative with our respective research partners, Eastern Health staff names are in bold.

Clinical program reports available include:

- Allied Health
- Cardiology
- Eastern Health Clinical School and Eastern Clinical Research Unit (ECRU)
- Eastern Clinical Research Unit – Translational Division (ECRU-TRD)
- Eastern Health Clinical School Research Division, Medical Student Programs
- Emergency services
- Endocrinology
- Gastroenterology and Hepatology
- Geriatric
- Haematology
- Integrated Renal and Obstetric services
- Intensive Care services
- Mental Health programs
- Neuroscience
- Nursing and Midwifery
- Oncology
- Palliative Care
- Pharmacy
- Respiratory and Sleep Medicine
- Rheumatology
- Surgical Research Group
- Turning Point