David **Cook**

PhD Candidate (Vanderhyden Lab)

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Education

University of Ottawa — *Ottawa, ON*

PhD Candidate - Cellular and Molecular Medicine — *2016-21*

- 'Transcriptional dynamics of the epithelial-mesenchymal transition'

University of Ottawa — *Ottawa, ON*

MSc - Cellular and Molecular Medicine — *2014-16*

- 'Snf2h-mediated chromatin remodelling and its regulation of the pluripotent state'

University of Ottawa — *Ottawa, ON*

BSc (Honours) - Physiology — *2010-14*

- 'Elucidating the EMT-associated factors that regulate the expansion of stem cell characteristics in the mouse ovarian surface epithelium'

Achievements and Awards

2020	Judith R. Raymond Scholarship in Cancer Research
2019	Best graduate student poster presentation, University of Ottawa Faculty of Medicine Research Day
2019	Dr. Ronald G. Worton Researcher in Training Award (Nominated), Ottawa Hospital Research Institute
2019	Faculty of Medicine Award of Excellence (PhD; Nominated), University of Ottawa
2018-21	Frederick Banting and Charles Best Canada Graduate Scholarship (CIHR)
2014-21	Excellence Scholarship, University of Ottawa
2016-18	Ontario Graduate Scholarship (PhD), University of Ottawa
2018	David Colcleugh Leadership Award (Nominated)
2017	Best oral presentation, University of Ottawa Department of Cellular and Molecular Medicine Research Day
2016	Faculty of Medicine Award of Excellence (MSc; Nominated), University of Ottawa
2015	Teaching Assistant Excellence Award (Nominated), University of Ottawa

Publications

- Carter, LE.*, **Cook, DP.***, McCloskey, CW., Dang, T., Collins, O., Gamwell, LF. Vanderhyden, BC. (2020). Transcriptional profile of stemness in the mouse ovarian epithelium. *Communications Biology*, In Review.
  ***Authors contributed equally**
- Robichaud, S., Fairman, G., Vijithakumar, V., Mak, E., **Cook, DP.**, Pelletier, A., Huard, S., Vanderhydn, BC., Figeys, D., Lavallée-Adam, M., Baetz, K., Ouimet, M. (2020). Identification of novel lipid droplet factors that regulate lipophagy and cholesterol efflux in macrophage foam cells. *Autophagy*, In Review
- Hurskainen, KM., Mižíková I., **Cook, DP.**, Cyr-Depauw, C., Lesage, F., Helle, E., Renesme, L., Lithopoulous, MA., Jankov, RP., Vanderhyden, BC., Thébaud, B. (2020). Single-cell transcriptomic analysis of normal and impaired lung development in the mouse. Preprint in *bioRxiv* (doi:10.1101/868802). *Nature Communications*, In Review.
- Karunakaran, D., Turner, AW., Duchez, A., Soubeyrand, S., Rasheed, A., Smyth, D., **Cook, DP.**, Kandiah, JW., Pan, C., Geoffrion, M., Nikpay, M., Lee, R., Boytard, JW., Pan, C., Nguyen, M., Lau, P., Laakso, M., Ramkhelawon, B., Vanderhyden, BC., Liu, P., Berger, SB., Gough, PJ., Beal, AM., Bertin, J., Harper, M., Lusis, AJ., McPherson, R., Rayner, KJ. (2020). RIPK1 directs immunometabolism in humans and can be therapeutically silenced to improve metabolic dysfunction in diet-induced obesity. *Nature Metabolism*, In Review.
- Galpin, KJC.*, **Cook, DP.***, Salemi, LM., Urowitz, S., Williams, C., Bell, JC., Brundage, MD., Vanderhyden, BC. (2020). Report on the Canadian Cancer Research Conference 2019. *Current Oncology*, In Press.
  ***Authors contributed equally**
- Al-Zahrani, K., Abou-Hamad, J., **Cook, DP.**, Pryce, BR., Hodgins, JJ., Labrèche, C., Robineau-Charette, P., de Souza, CT., Bell, JC., Auer, RC., Ardolino, M., Vanderhyden, BC., Sabourin, LA. (2020). Loss of the Ste20-like

kinase enhances tumorigenesis through AKT/Sox9-dependent Sox10 induction in HER2-positive breast cancers". *Oncogene*, doi:10.1038/s41388-020-1315-3.

- **Cook, DP.***, Vanderhyden, BC.* (2020). Context specificity of the EMT transcriptional response. Preprint in *bioRxiv* (doi:10.1101/732412). *Nature Communications*, 11(1): 2142.
  ***Co-corresponding author**
- **Cook, DP.***, Vanderhyden, BC.* (2020). Cre-mediated deletion of SMARCA5 disrupts pluripotency in mouse embryonic stem cells. Preprint in *bioRxiv* (doi:10.1101/2020.04.02.022285).
  ***Co-corresponding author**
- McCloskey, CW., **Cook, DP.**, Kelly, BS., Azzi, F., Allen, CH., Forsyth, A., Upham, J., Rayner, KJ., Gray, DA., Boyd, RW., Murugkar, S., Lo, B., Trudel, D., Senterman, MK., Vanderhyden, BC. (2019). Metformin abrogates age-associated ovarian fibrosis in women. *Clinical Cancer Research*. doi:10.1158/1078-0432.CCR-19-0603.
- Carter, LE., **Cook, DP.**, Collins O., Gamwell, LF., Dempster, HA., Wong, HW., McCloskey, CW., Garson, K., Vuong, NH., Vanderhyden, BC. (2019). COX2 is induced in the ovarian epithelium during ovulatory wound repair and promotes cell survival. *Biology of Reproduction*, doi:10.1093/biolre/ioz134.
- **Cook, DP.***, Vanderhyden, BC. (2019). Ovarian cancer and the evolution of subtype classifications using transcriptional profiling. *Biology of Reproduction*, 101(3):645-658.
  Invited review for New Horizons anniversary issue
  ***Corresponding author**
- Vuong, NH.*, **Cook, DP.***, Forrest, LA., Carter, LE., Robineau-Charette, P., Kofsky, JM., Hodgkinson, KM., Vanderhyden, BC. Single-cell RNA sequencing reveals transcriptional dynamics of estrogen-induced dysplasia in the ovarian surface epithelium. (2018) *PLOS Genetics*, 14(11):e1007788.
  ***Authors contributed equally**
- Al-Zahrani, K., **Cook, DP.**, Vanderhyden, BC., Sabourin, LA. (2018) Assessing the efficacy of androgen receptor and Sox10 as independent markers of the triple-negative breast cancer subtype by transcriptome profiling. *Oncotarget*, 9(70), 33348-33359.
- Carter, LE.*, **Cook, DP.***, Vanderhyden, BC. (2018). Phenotypic Plasticity and the Origins and Progression of Ovarian Cancer. The Ovary (3rd Edition; Elsevier).
  ***Authors contributed equally**
- Vlasschaert, C., **Cook, DP.**, Xia, X., Gray, D. (2017). The evolution and functional diversification of the deubiquitinating enzyme superfamily. *Genome Biol and Evol*, 9(3), 558-573.

Presentations

uOttawa BMI Research Night Out (Ottawa, ON)

'Beyond genetics: cellular adaptation and cooperation' — *November 28, 2019*

Ottawa Hospital Research Institute Research Day (Ottawa, ON)

'Revealing context-specificity of the epithelial-mesenchymal transition' — *November 7, 2019*

10x Genomics User Group Meeting (Ottawa, ON)

'Comparing regulatory features of the epithelial-mesenchymal transition using highly multiplexed scRNA-seq' — *April 25, 2019*

Centre for Research in Reproduction and Development (McGill University, Montreal, QC)

'Resolving transcriptional dynamics of the epithelial-mesenchymal transition using single-cell RNA sequencing' — *April 19, 2018*

Stem Cell Network RNA-seq Workshop (Ottawa, ON)

'Revealing transcriptional dynamics of the epithelial-mesenchymal transition using single-cell RNA sequencing' — *May 8, 2018*

10x Genomics User Group Meeting (Ottawa, ON)

'Revealing transcriptional dynamics of the epithelial-mesenchymal transition using single-cell RNA sequencing' — *February 2, 2018*

uOttawa Cellular and Molecular Medicine Research Day (Ottawa, ON)

'Molecular determinants of the epithelial-mesenchymal transition in ovarian cancer' (Awarded best oral presentation) *November 24, 2017*

Stem Cell Network RNA-seq Workshop

'Gene expression one cell at a time' *May 9, 2017*

Fluidigm Seminar (Ottawa, ON)

'Using the Fluidigm C1 system for high-throughput RNA-seq to investigate the effects of prolonged estrogen exposure on the mouse ovarian surface epithelium' *February 6, 2017*

Selected Poster Presentations

- **Cook, DP.**, McGinnis, CS., Patterson, DM., Gartner, ZJ., Vanderhyden, BC. (2019). Comparing transcriptional dynamics of the epithelial-mesenchymal transition using highly multiplexed scRNA-seq. *Keystone Symposia: Cellular Plasticity - Reprogramming, Regeneration, and Metaplasia* (Keystone, CO)
- **Cook, DP.**, McGinnis, CS., Patterson, DM., Gartner, ZJ., Vanderhyden, BC. (2019). Comparing transcriptional dynamics of the epithelial-mesenchymal transition using highly multiplexed scRNA-seq. *Nature Conference: The Tumour Cell - Plasticity, Progression, and Therapy* (New York, NY)
- **Cook, DP.**, YC, Wang., Ragoussis, J., Vanderhyden, BC. (2018). Transcriptional and epigenetic determinants of the epithelial-mesenchymal transition in ovarian cancer. *Single Cell Biology 2018* (Hinxton, UK)
- **Cook, DP.**, Paradis, F., Picketts, DJ., Vanderhyden, BC. (2019). Snf2h-mediated chromatin remodelling is essential for the maintenance of embryonic stem cell identity. *Keystone Symposia: Transcriptional and Epigenetic Influence on Stem Cell States* (Steamboat Springs, CO)

Teaching Experience

Workshop lecturer

University of Ottawa / Ottawa Hospital Research Institute *April 27, 2020*

- Led a day-long workshop on scRNA-seq anlaysis via Zoom due to COVID-19

Workshop lecturer

Stem Cell Network *October 15-16, 2019 & May 7-8, 2018*

- Designed and led a day-long workshop on scRNA-seq analysis

Teaching Assistant

with Dr. Jacqueline Carnegie *2013-present*

- Designed and implemented tutorial sessions for students enrolled in the first-year Anatomy and Physiology (ANP) 1105, 1106, and 1107 courses

Lab demonstrator

BIO2133 - Genetics *January-June, 2016*

- Facilitated a section of the lab component for the second-year Genetics course at the University of Ottawa
- Set up labs, provided brief lectures to introduce relevant material, and assisted students throughout the lab

Other Experience

Organizing Committee Member

Human Anatomy and Physiology Society Annual Conference (Ottawa, 2020) *2019-2020*

- Involved in program planning and volunteer recruitment. Note: Event cancelled due to COVID-19

Cancer Outreach Coordinator

Let's Talk Science (Ottawa) *2016-present*

- Involved with the organization of the annual Let's Talk Cancer Symposium in partnership with the Canadian Cancer Society, along with the development of cancer-related workshops to be disseminated to local high school classrooms
- Have worked closely with the non-profit organization Encounters with Canada to develop workshops, organize career panels, and coordinate site visits to health- and technology-related institutions in Ottawa for high school students from across Canada. Have organized events for over 3000 Canadian students from across the country.