

DWAYNE RICARDO TUCKER

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EDUCATION

PhD, Women+ & Children's Health Sciences University of British Columbia, Vancouver, Canada Dissertation: "Clinical and Molecular prediction of pain outcomes after endometriosis surgery" Sub-specialization: Machine learning, clinical prediction models, and pathology Supervisors: Dr. Paul Yong and Dr. Aline Talhouk	2019-present
MSc., Oncology (with Merit) University of Nottingham, Nottingham, United Kingdom Thesis: "Characterization of ITGB3 in response to sublethal chemotoxicity in Acute Myeloid Leukemia" Concentration: Molecular processes in cancer initiation, progression, and treatment Supervisor: Dr. Monica Pallis	2016-2017
BSc., Medical Technology Northern Caribbean University, Manchester, Jamaica Concentration: Theory and practical aspects of laboratory medicine Thesis: "Should the Clinical Lab recommend Vanillylmandelic Acid as a routine test for hypertensive patients in Jamaica?"	2006-2010

RESEARCH EXPERIENCE

PhD Candidate <i>University of British Columbia, Canada B.C. Children's and Women's Hospital</i> <ul style="list-style-type: none">Developed and validated high-accuracy statistical and machine learning models to predict post-surgical outcomes in endometriosis and support pre-surgical decision-making.Analyzed over 1200 immunohistochemical samples and identified molecular markers, including somatic mutations, associated with clinical outcomes in endometriosis.Led multiple concurrent clinical projects, contributing to study design and conceptualization, data cleaning, and statistical analysis, contributing to five (5) peer-reviewed publications, one (1) article submission under review, and one (1) abstract publication.Managed research collaborations, ensuring timely delivery and adherence to high-quality standards.Created interactive tools (Tableau dashboards and R Shiny apps) to visualize data collection trends, streamline reporting for study progress, and present predictions from machine learning models.Communicated scientific findings to both technical and non-technical audiences, earning multiple awards for oral presentations and abstracts at domestic and international conferences.Contributed clinical modelling and machine learning expertise on three (3) major project funding applications (one funded and two under review), focused on perinatal and pain outcomes in women's health.Mentored junior researchers, visiting fellows, and undergraduates in clinical data analysis, research methodologies, and histopathology, leading to three (3) publications with mentees as first authors, one as (1) co-author, and two (2) poster presentations.	April 2020-present
Research Assistant <i>British Columbia Centre for Disease Control, Canada Infectious Disease</i> <ul style="list-style-type: none">Helped develop questionnaires to assess the uptake of human papillomavirus vaccination and cervical cancer screening programs among Trans Men assigned female at birth across Canada.Drafted study-related documents, including consent forms, study protocol, and recruitment materials, and garnered ethics approval.Performing data cleaning and analysis for multi-provincial clinical database assessing for patient-reported outcomes and clinical and pathological predictors of anal dysplasia, aiming to improve anal cancer screening.Collaborating on new study proposals and methods design for future grant submissions.	May 2023-present
PhD Student <i>University of British Columbia, Canada Vancouver Prostate Centre</i> <ul style="list-style-type: none">Optimized the detection of a novel circular RNA (circKLK3-2345) encoded by the KLK3 gene in prostate cancer cell lines.Conceptualized and wrote a first-author publication on the diagnostic potential of circular RNAs for prostate cancer.	Sep 2019-Mar 2020
NIH project-funded Research Fellow <i>Fox Chase Cancer Center, U.S.A. Ragin Lab</i> <ul style="list-style-type: none">Genotyped DNA samples to assess the prevalence of three potential genetic markers (single nucleotide polymorphisms) for prostate cancer risk in Black men.Analyzed urine samples to evaluate tobacco smoke exposure and metabolism in African Americans as part of an ongoing	July-Aug 2019

study on cancer risk in Blacks.

- Generated pilot data that helped to secure over 2,000,000 JMD (20,000 JMD) in additional research funding.

Research Coordinator

Feb 2018-Aug 2019

Caribbean Institute for Health Research, Jamaica | Epidemiology Unit

Investigated specific SNPs in predicting cardiometabolic disease in Black-Caribbean men receiving androgen deprivation therapy for prostate cancer.

- Spearheaded recruitment activities, enrolling 90 prostate cancer survivors and conducted all initial and follow-up participant interviews (including anthropometric measurements).
- Led the prostate cancer genetics research study, overseeing study design, ethics application, and data management.
- Performed all aspects of biospecimen collection and processing (including phlebotomy, DNA extraction, clinical hematology and chemistry analyses), and contributed to developing the research unit's first biorepository.
- Established standard operating procedures for medical testing, maintaining high standards for sample processing, and data collection and reporting.

Master's Student

Jan 2017-Sept 2017

University of Nottingham, U.K. | Hematology Dept.

- Developed highly reproducible in vitro bone marrow experimental models using acute myeloid leukemia cell lines to investigate the impact of dormancy and sub-lethal drug exposure on Integrin Beta-3 protein expression.

WORK EXPERIENCE

Research Assistant

July 2023-Jan 2024

University of British Columbia | Gillian Hanley Research Lab

- Comprehensive data abstraction from over 1200 pathology reports for an ongoing project on long-term endometriosis outcomes.

Lab administrator

July 2020-Dec 2022

Skidmore Goodman Research Wet lab | WHRI | B.C. Children's and Women's Hospital

- Coordinated the procurement and commissioning of ~300,000 CAD worth of scientific equipment and spearheaded all other aspects of a new lab space set-up.
- Spearheaded all facets of laboratory upkeep, including the development of standard operating procedures, meticulous management of procurement and inventory, and training of all new and visiting personnel.
- Helped generate videos and other promotional materials for donor engagement.

Teaching Assistant Marker, BIOL 155

2020-2021

University of British Columbia, Canada

- Graded term papers, assignments, and final exams.

Senior Clinical Laboratory Scientist

July 2010-Aug 2019

University of the West Indies, Jamaica | Pathology

- Processed over 5600 medical samples monthly in accordance with quality guidelines, ensuring data accuracy, confidentiality, and timely health data reporting.
- Led quality assurance initiatives, improving external proficiency test scores by up to 30% and elevating the overall lab performance metrics.
- Influenced policy changes in medical testing, resulting in annual savings of over 1,000,000 JMD (10,000 CAD).
- Spearheaded the implementation and optimization of new clinical testing protocols, ensuring regulatory compliance and increasing workflow efficiency by 20%.
- Helped to design, implement, and validate the company's first laboratory information system to streamline clinical data operations and management
- Trained and mentored over 100 interns (pathology residents, medical technology students, and medical students).
- Supervised over 35 undergraduate clinical laboratory projects as a clinical rotation facilitator.
- Taught clinical chemistry lab principles to over 700 medical students and delivered biannual lectures to groups of 300 students.
- Regularly served as Chief Technologist, overseeing a team of 20 employees and ensuring exceptional medical result quality and turnaround times.
- Co-authored four (4) book chapters and one (1) peer-reviewed journal article.

Medical Technology Intern

Jan 2010-June 2010

University Hospital of the West Indies, Jamaica

- Practical rotation of medical laboratories: Clinical Chemistry, Haematology, Histology, Cytology, Clinical Microbiology, Blood Bank, Immunology/ Serology, and Clinical Microscopy.

HONORS, AWARDS & GRANTS (200,648 CAD)

- Best Oral Communication - 10th Society for Endometriosis & Uterine Disorder (SEUD) Congress in Geneva, Switzerland (2024); 500 euros (~740 CAD)
- Trainee Travel Award (2024) – Women’s Health Research Cluster; 250 CAD
- Top Abstract & Oral Research Presentation (2024) – CanSAGE, Victoria, Canada
- Best Oral Communication - 10th Society for Endometriosis & Uterine Disorder (SEUD) Congress in Geneva, Switzerland (2024); 500 euros (~740 CAD)
- SEUD International Travel Award (2024) – 10th SEUD; 1000 euros (~ 1,470 CAD)
- Faculty of Medicine Travel Award (2024) – UBC; 500 CAD
- Graduate Covid Program Tuition Award (2024) – UBC; 2163 CAD
- Shaughnessy Hospital Society Fellowship in Health Care (2022-2023) - UBC; 8,350 CAD
- Michael Smith Memorial Fellowship (2022-2023) - UBC; 4,275 CAD
- Anti-racism Initiative Grant winner (2021) – UBC Anti-Racism Initiatives Fund (5,000 CAD) + Graduate Postdoctoral Studies (6,000 CAD)
- Top Three Oral Presentation (2021) – CanSAGE Conference, Canada
- Graduate Research Award in Women’s Health (2021-2022) - BC Women’s Health Research Institute; 13,500 CAD
- Graduate Student Travel Award (2022) – UBC; 500 CAD
- The Presidents Academic Excellence Initiative PhD award (2020-2024) – UBC; 6,000 CAD
- Faculty of Medicine Graduate Awards (2019-2023) – UBC; 8,000 CAD
- International Tuition Awards (2016-2023) – UBC; 16,000 CAD
- **Declined:** Developing Solution Scholarship (2016-2017) – The University of Nottingham (U.K.); £19,300 (~ 32,500 CAD)
- Outstanding Service Award to Clinical Chemistry between 2010 and 2019 (2019); University of the West Indies, Jamaica
- Special Alumni Award (2019); York Castle High School, Jamaica
- University of Nottingham’s Partnership scholarship award (U.K.) (2016-2017); £19,300 (~ 32,500 CAD)
- British Chevening Scholarship (2016-2017)- Foreign & Commonwealth Office (U.K.); £34,500 (~58,100 CAD)
- Most Outstanding Intern on Rotation (2010) – University Hospital of the West Indies
- University Honour Roll (2002- 2010) - Northern Caribbean University, Jamaica (entire tenure)

PUBLICATIONS

[Link to Google Scholar](#)

Journal Articles

1. **Tucker DR**, Dungate B, Chiu DS, Noga HL, Lee C, Bedaiwy MA, Williams C, Allaire C, Talhouk A, Yong PJ et al. Endometriosis Pain Index: Development and validation of machine learning models to predict poor pain-related quality of life after endometriosis surgery. (Submitted in 2024).
2. **Tucker DR**, Lee AF, Orr NL, Alotaibi FT, Noga HL, Williams C, Allaire C, Bedaiwy MA, Huntsman DG, Köbel M, Anglesio MA, Yong PJ. [Somatic PTEN and ARID1A loss and endometriosis disease burden: a longitudinal study](#). Human reproduction. 2024 Dec. doi.org/10.1093/humrep/deae269.
3. Sreya M, **Tucker DR**, Yi J, Alotaibi FT, Lee AF, Noga HL, Yong PJ. [Nerve Bundle Density and Expression of NGF and IL-1β Are Intra-Individually Heterogenous in Subtypes of Endometriosis](#). Biomolecules. 2024 May;14 (5):583. doi: 10.3390/biom14050583.
4. Dungate B, **Tucker DR**, Goodwin E, Yong PJ. [Assessing the Utility of artificial intelligence in endometriosis: Promises and pitfalls](#). Womens Health (Lond). 2024 Jan-Dec;20:17455057241248121. doi: 10.1177/17455057241248121.
5. Zoet G, **Tucker DR**, Orr NL, Alotaibi FT, Liu YD, Noga H, Köbel M, Yong PJ. [Standardized protocol for quantification of nerve bundle density as a biomarker for endometriosis](#). Front Reprod Health. 2023 Nov 30;5:1297986. doi: 10.3389/frph.2023.1297986.
6. **Tucker DR**, Noga HL, Lee C, Chiu DS, Bedaiwy MA, Williams C, Allaire C, Talhouk A, Yong PJ. [Pelvic pain comorbidities associated with quality of life after endometriosis surgery](#). Am J Obstet Gynecol. 2023 Aug;229(2):147.e1-147.e20. doi: 10.1016/j.ajog.2023.04.040.
7. **Tucker D**, Zheng W, Zhang DH, Dong X. [Circular RNA and its potential as prostate cancer biomarkers](#). World J Clin Oncol. 2020 Aug 24;11(8):563-572. doi: 10.5306/wjco.v11.i8.563.
8. Donovan McGrowder, **Dwayne Tucker**, Fabian Miller. [Prostate Specific Antigen Testing in a Tertiary Teaching Hospital](#). Indian Journal of Applied Research. 2019 March; 9(3):4-7. doi: 10.36106/ijar.

Book Chapters

1. Miller, F., Anderson, M., **Tucker, D.**, Vaz, K., Brown, J., Anderson-Jackson, L., & McGrowder, D. A. [Diabetes: biopsychosocial features affecting metabolic control and treatment adherence](#). Biopsychosocial Perspectives and Practices for Addressing Communicable and Non-Communicable Diseases, edited by Simon George Taukeni, 106-133. Hershey, PA: IGI Global, 2020.
2. Anderson, M., **Tucker, D.**, Miller, F. G., Vaz, K., Anderson-Jackson, L., & McGrowder, D. [Quality of Life and Well-Being of Breast Cancer Patients](#). In Psycho-Social Perspectives on Mental Health and Well-Being, edited by Srinivasan Padmanaban and Chittaranjan Subudhi, 67-94. Hershey, PA: IGI Global, 2020.
3. McGrowder, D., **Tucker, D.**, Miller, F. G., Anderson, M., Vaz, K. A., & Anderson-Jackson, L. [Accreditation of Medical Laboratories: Challenges and Opportunities](#). Handbook of Research on Modern Educational Technologies, Applications, and Management, edited by Mehdi Khosrow-Pour D.B.A., 600-616. Hershey, PA: IGI Global, 2021.
4. **Tucker D**, Anderson M, Miller F, Vaz K, Anderson-Jackson L, McGrowder D. [Dietary Antioxidants in the Chemoprevention of Prostate Cancer](#). IntechOpen; 2019.

SELECTED PRESENTATIONS & COMMUNICATIONS

Poster presentations:

71 st Society for Reproductive Investigation Annual Scientific Meeting	March 2024
The World Congress on Endometriosis	May 2023
Canadian Student Health Research Forum (National Poster Competition) & Gairdner Symposium	June 2022
<i>* Invited as a top 5% doctoral candidate in health research in Canada</i>	

Oral presentations:

Canadian Society for the Advancement of Gynecologic Excellence (CanSAGE) conference	Sept 2024
<i>* Top 3 Oral Communication</i>	
10 th SEUD Congress	May 2024
<i>* Best Oral Communication Award</i>	
Canadian Society for the Advancement of Gynecologic Excellence (CanSAGE) conference	Sept 2021
<i>* Top 3 Oral Communication</i>	
OGYN Academic Day, Faculty of Medicine, UBC	March 2021
Caribbean Institute of Health Research Symposium	April 2019
Faculty of Medicine Research Day, University of the West Indies	Feb 2019

Other Knowledge Translation opportunities

@WomensResearch Episode 21: Checking in with Dr. Nikki Salmond and Dwayne Tucker	Sept 2022
Op-ed: Dwayne Tucker: My Journey Through Mentorship	Feb 2021

SKILLS

Software: R; R Shiny; Quarto; Python; SPSS; SAS; Tableau; Git; SQL; GraphPad Prism

Statistics and analytics: Regression; machine learning; neural networks; decision curve analysis; survival analysis

Complementary learning:

Data Analyst in R, <i>Datacamp</i>	Feb 2024
Hypothesis Testing in R, <i>Datacamp</i>	Feb 2024
Machine Learning with Caret, <i>Datacamp</i>	Sept 2022
Supervised Learning in R: Classification, <i>Datacamp</i>	Aug 2022
PHDA01- Working with Administrative Data, <i>Population data BC</i>	Jan 2022
Population Health: Predictive Analytics, <i>Leiden University (Coursera)</i>	Feb 2021
Introduction to Statistics & Data Analysis in Public Health, <i>Imperial College London (Coursera)</i>	Jan 2021
Logistic Regression in R for Public Health, <i>Imperial College London (Coursera)</i>	Jan 2021

University Courses:

STAT 545A- Exploratory Data Analysis, <i>University of British Columbia</i>	Fall 2022
STAT 545B- Exploratory Data Analysis, <i>University of British Columbia</i>	Fall 2022

Wet lab: PCR, DNA transfection & cloning, bacterial transformation, RNA extraction, electrophoresis, culture & sensitivity, cell culture, cell viability assays, flow cytometry, Immunohistochemistry, ELISA, FISH, Western Blot, BCA protein assay.

SERVICE

Founder/Coordinator - <u>The Effective Mentorship of Racialized Graduate Students Initiative</u> ,	Sept 2021-Mar 2023
<ul style="list-style-type: none">○ Primary applicant for the successful grant application to fund the initiative.○ Created and implemented surveys and conducted focus groups to gather qualitative data.○ Planned and emceed a successful workshop on racism in education.○ Proposed recommendations to enhance mentorship for racialized students, earning commendation from the Dean of Graduate Studies.	
Coordinator - Black History Month Event with Graduate Studies, UBC	Feb 2021
Graduate Wellbeing Engagement Trainee - UBC	July 2020-Aug 2021
V.P. Social Media & Marketing - Interdisciplinary Graduate Student Network, UBC	June 2020-Dec2021
Adjudicator - Multidisciplinary Undergraduate Research Conference at UBC (Online canvas)	May 2020
Medical Laboratory Expert - Co-designed COVID-19 medical testing protocols in Jamaica	May 2020
Graduate Student Ambassador - UBC	May 2020-Mar 2021
Laboratory representative - Vancouver Prostate Centre	Jan-Mar 2020
Lead coordinator - Reproductive & Developmental Sciences Student Organization, UBC	Dec 2019-Sept 2022
Volunteer - Clothes and Food Drive with the Shiloh Apostolic Church, Jamaica	Aug 2019
Medical laboratory scientist volunteer - Free health fairs in Kingston, Jamaica	2010-2018
<ul style="list-style-type: none">○ Administered free urinalyses and blood tests to over 400 patrons at each event.	

PROFESSIONAL AFFILIATIONS

African-Caribbean Cancer Consortium Member (AC3)	2019-present
Professions Supplementary to Medicine, Jamaica	2010-present
Caribbean Association of Medical Technologists (CASMET)	2010-2019