

Curriculum Vitae: Candice Cassia Poon, BSc, MD, PhD, FRCSC

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Current Affiliation

2023-present **Assistant professor at the University of Calgary**
Department of Clinical Neurosciences, Section of Neurosurgery
Department of Oncology

Education and Training

2021-2023 **MD Anderson Cancer Center Neurosurgical-Oncology Fellowship**
Houston, TX, USA

- **Year 1 Research Fellowship Supervisors:** Dr. Frederick Lang (Chair of the Department of Neurosurgery) and Dr. Padmanee Sharma (Scientific Director of the James P. Allison Institute of Immunology)
- **Year 2 Clinical Neurosurgical-Oncology Fellowship**

2011-2021 **Neurosurgical Residency (with enfolded PhD)**
University of Calgary, Calgary, AB, Canada

2015-2019 **Clinician Investigator Program**
University of Calgary, Calgary, AB, Canada

2014-2019 **PhD – Neuro-Oncology and Neuroimmunology**
University of Calgary, Calgary, AB, Canada

- Supervisors: Dr. V. Wee Yong (Past President of the International Society of Neuroimmunology) and Dr. John Kelly (Assistant Professor in the Division of Neurosurgery)

2007-2011 **Doctor of Medicine**
University of Alberta, Edmonton, AB, Canada

2003-2007 **BSc Neuroscience Honors**
University of Alberta, Edmonton, AB, Canada

- **Dean's Silver Medal in Science**

Research Experience

2021-2022 **MD Anderson Cancer Center Neurosurgical-Oncology Fellowship**
Houston, TX, USA

- **Year 1 Research Fellowship Supervisors:** Dr. Frederick Lang (Chair of the Department of Neurosurgery) and Dr. Padmanee Sharma (Scientific Director of the James P. Allison Institute of Immunology)
- Project title: Immune and perivascular stromal cell interactions in glioma

2015-2019 **Clinician Investigator Program**
University of Calgary, Calgary, AB

- The Clinician Investigator Program is a Royal College of Physicians and Surgeons of Canada-accredited competitive postgraduate medical training program which provides mentorship and salary support for residents interested in a career as a clinician-scientist.

2014-2019 **PhD**
University of Calgary, Calgary, AB

- Co-supervised by Drs. V. Wee Yong and John Kelly

- Thesis title: Characterization and therapeutic manipulation of glioblastoma-associated microglia, macrophages, and cytokines to improve prognosis.

Honors/Awards – Research

**All amounts are in CAD*

2022	First place for Best Presentation at the MD Anderson Cancer Center Division of Surgery Clinical Trials Course	
2022	2022 The SmartForceps System: A quantifiable platform for surgical education Co-Applicant to the Canadian Institutes of Health Research (CIHR) Clinical Trials Operating Grant (PI Dr. Garnette Sutherland)	
2016-2019	Clark H. Smith Brain Tumor Graduate Studentship	\$75,000
2019	Canadian Neurosurgical Society K. G. McKenzie Memorial Prize for Basic Research	\$1,000
	<ul style="list-style-type: none"> • <i>The Canadian Neurosurgical Society, in co-operation with the Royal College of Physicians and Surgeons of Canada, will award one prize in Basic Neuroscience for the best manuscript submitted by a neurosurgical resident, in which he or she is the principal author.</i> 	
2018	Society for Neuro-Oncology Adult Basic Research Abstract Award	\$1,300
	<ul style="list-style-type: none"> • <i>Awarded to the top-scoring abstract in the basic science category submitted for the annual conference; oral presentation to be given during the plenary.</i> 	
2018	Doug W. Zochodne Award for Excellence in Basic Science Research	\$500
2018	Resident Research Travel Grant	\$2,000
2016	Queen Elizabeth II Graduate (Doctoral) Scholarship	\$5,000
2016	Faculty of Graduate Studies Doctoral Scholarship	\$10,000
2016	Hotchkiss Brain Institute's Annual Poster Competition (2nd prize)	\$200
2016	Alberta Neurosurgical Society Bryce Weir Award for Basic Science Research	\$500
2014, 2015	John D. Petrie QC Memorial Graduate Scholarship	\$20,000
2012	Alberta Neurosurgical Society Bryce Weir Award for Clinical Research	\$500
2008	Millennium Scholarship	\$3,000
2008	Dorothy Jean Usher Memorial Summer Research Award	\$5,000
2007	Alberta Heritage Foundation for Medical Research (AHFMR) Award	\$5,000
2005, 2006	National Sciences and Engineering Research Council (NSERC) Undergraduate Research Award	\$10,000

Honors/Awards – General

**All amounts are in CAD*

2007	Dean's Silver Medal in Science <i>Awarded annually to convocating students with superior academic achievement enrolled in an Honors program in the Faculty of Science</i>	
2003-2007	Chancellor's Entrance Citation	\$40,000

	<i>Awarded to students entering an undergraduate degree program at the University of Alberta on the basis of admission average (~95% or above)</i>	
2005	Louise McKinney Postsecondary Scholarship <i>This scholarship recognizes University of Alberta students who are in approximately the top 1.5 to 2% of their class</i>	\$2,500
2003	Carlson Academic Excellence Scholarship in Science <i>Awarded to students with superior academic achievement entering the Faculty of Science</i>	\$5,000
2003	Governor General's Bronze Academic Medal <i>Awarded to the student graduating with the highest average</i>	
2003	Rutherford Scholarship <i>Recognizes academic achievement</i>	\$2,500
2003	Jason Lang Scholarship <i>Recognizes academic achievement</i>	\$1,000
2003	International Baccalaureate Scholarship <i>Recognizes outstanding students completing the International Baccalaureate Diploma Program</i>	\$500
2003	Edmonton Chinese Bilingual Education Association Mandarin Scholarship <i>Recognizes academic achievement in a student learning the Chinese language</i>	\$500

Peer Review Activities

2023-Present	Reviewer, npj Precision Oncology
2019-Present	Reviewer, <i>Scientific Reports</i>
2018-Present	Editorial Board Member, Section of Cell Biology, <i>Journal of Clinical Medicine</i>
2018-Present	Reviewer, <i>Frontiers in Immunology</i>
2017-Present	Reviewer, <i>Oncotarget</i>

Leadership/Mentorship/Volunteer Activities

2021-Present	CNS Tumor Analysis Stream for Comprehensive Assessment of Biospecimens (CATALYST) Program Operations Team Member, MD Anderson Cancer Center
2016-2021	Helped establish the Leaders in Medicine Mentorship program and is also a mentor
2016-2018	Supervision of undergraduate student (KL) in the laboratory
2018	Resident representative during Neurosurgery Division External Review
2018	Representative during Charbonneau Cancer Institute External Review
2018	Resident representative during Department of Clinical Neurosciences Annual Retreat
2018	Student representative for Charbonneau Town Hall
2018	Resident representative on Charbonneau Institute Directorship Review Committee
2017	Resident representative on Neurosurgery Search and Selection Committee
2016-2017	Clinician Investigator Program Chief Resident
2014-2016	Supervision of undergraduate student (LH) in laboratory
2012-2014	Neurosurgery Academic Halfday Coordinator
2007-2011	Medical Class Council Member, Career Counseling Representative
2009	Alberta Cerebral Palsy Association, Youth Activation Volunteer
2008-2009	Medical Students Association, University of Alberta Essential Medicine Club Co-Leader
2008	Cystic Fibrosis Foundation of Canada, Shinerama Advanced Logistics Committee Co-Leader

2008 Medical Alumni Association, Sponsorship Committee Member
 2006-2008 The International Fight Against Cancer Club, Vice President of Events

Table 1. Mentorship activities.

Mentees	Dates	Institution	Level	Type of mentorship	Status
Mohammad Fayyad Zaman	2023-Present	University of Texas, MD Anderson	PhD student	Project-based (the role of perivascular stromal cells in angiogenesis)	PhD student at the University of Texas, MD Anderson
Gayathri Anandappa	2022-Present	University of Texas, MD Anderson	Research fellow	Project-based (biological differences underlying lung and liver metastases)	Research fellow at the University of Texas, MD Anderson
Shelley Herbrich	2021-Present	University of Texas, MD Anderson	Postdoctoral fellow	Project-based (the role of clonal hematopoietic mutations in solid tumors) and career mentorship	Postdoctoral fellow at the University of Texas, MD Anderson
Swetha Anandhan	2021-Present	University of Texas, MD Anderson	PhD student	Project-based (therapeutic targets in cancer-associated fibroblasts of the pancreas and epidermis) and career mentorship	PhD at the University of Texas, MD Anderson
Stephen Capone	2021-Present	University of Texas, MD Anderson	Research fellow	Career mentorship	Neurology resident at Virginia Tech Carilion School of Medicine
Angela Kim	2018-2019	University of Calgary	Medical student	Career mentorship	Vascular surgery resident at the University of Calgary
Runze Yang	2016-Present	University of Calgary	Postgraduate student	Career mentorship	Neurosurgery resident at the University of Calgary
Kaitlin Thomas	2016	University of Calgary	Undergraduate student	Career mentorship	Family medicine resident at the University of Calgary
Myra Chen	2014-Present	University of Calgary	Postgraduate student	Career mentorship	Medical student at the University of Calgary
Lisa Hur	2014-2019	University of Calgary	Undergraduate student	Project-based (innate immune cells in IDH-mutant glioma) and career mentorship	Medical student at the University of Calgary

Peer-Reviewed Publications

Goswami, S.[‡], Raychaudhuri, D.[‡], Singh, P.[‡], Natarajan, S.[‡], Chen, Y., **Poon, C. C.**, Hennessey, M., Zhang, J., Anandhan, S., Parker-Kerrigan, B., Macaluso, M., Zhong, H., Jindal, S., Lang, F., Basu, S., Sharma, P. (2023). Myeloid-specific KDM6B inhibition sensitizes Glioblastoma to PD1 blockade. *Submitted at Nature Cancer*.

[‡]Joint co-authors

Sharma, P., Goswami, S., Raychaudhuri, D., Siddiqui, B., Singh, P., Nagarajan, A., Liu, J., Subudhi, S., **Poon, C. C.**, Gant, K., Herbrich, S., Anandhan, S., Islam, S., Amit, M., Anandappa, G., Allison, J. P. (2023). Immune Checkpoint Therapy - Current Perspectives and Future Directions. *Cell*, doi.org/10.1016/j.cell.2023.03.006.

Poon, C. C., Herbrich, S., Hossain, A., Chen, Y., Basu, S., Fuller, G., Goswami, S., Gumin, J., Jindal, S., Ledbetter, D., Lihong, L., Macaluso, M., Parker-Kerrigan, B., Yang, J., Lang, F.*, Sharma, P.*. (2023). PDGFRB+ Mesenchymal stem cells and fibroblasts underly microvascular proliferation in glioma. *Manuscript in preparation*.

*Joint senior authors

Poon, C. C.[‡], Cezayirli, P.[‡], Catalino, M.[‡], Brahimaj, B.[‡], Prabhu, S. (2023). The incidence of operative intracranial metastases. *Manuscript in preparation*.

[‡]Joint co-authors

Sarkar, S., Yang, R.[‡], Mirzaei, R.[‡], Rawji, K., **Poon, C. C.**, Mishra, M., Zemp, F. J., Bose, P., Kelly, J. J. K., Dunn, J. F., Yong, V. W. (2020). Control of brain tumor growth by reactivating myeloid cells with niacin. *Science Translational Medicine*, doi: 10.1126/scitranslmed.aay9924.

[‡]Joint co-authors

- Sarkar, S., Li, Yi., Mirzaei, R., Rawji, K., **Poon, C. C.**, Wang, J., Kumar, M., Bose, P., Yong, V. W. (2020). Demeclocycline reduces the growth of human brain tumor-initiating cells: direct activity and through monocytes. *Frontiers in Immunology*, doi: 10.3389/fimmu.2020.00272.
- Poon, C. C.**, Gordon, P., Liu, K., Yang, R., Susobhan, S., Mirzaei, R., Sheikh, T., Hughes, M. L., Yong, V. W., Kelly, J. (2019). Distinct microglia and macrophage profile in human IDH-mutant glioblastoma. *Oncotarget*, doi:10.18632/oncotarget.26863.
- Sarkar, S., **Poon, C. C.**, Mirzaei, R., Hader, W., Kelly, J., Dunn, J., Yong, V. W. (2018). Microglia induces Gas1 expression in human brain tumor-initiating cells to reduce tumorigenicity. *Scientific Reports*, doi:10.1038/s41598-018-33306-0
- Poon, C. C.**, Ebacher, V., Liu, K., Yong, V. W., & Kelly, J. J. P. (2018). Automated slide scanning and segmentation in fluorescently-labeled tissues using a widefield high-content analysis system. *Journal of Visualized Experiments*, 135. doi:10.3791/57440
- Poon, C. C.**, Sarkar, S., Yong, V. W., & Kelly, J. J. P. (2017). Glioblastoma-associated microglia and macrophages: targets for therapies to improve prognosis. *Brain*, 140(6), 1548-1560. doi:10.1093/brain/aww355
- Poon, C. C.**, & Kelly, J. J. (2017). Development of crizotinib, a rationally designed tyrosine kinase inhibitor for non-small cell lung cancer. *Int J Cancer*, 140(9), 1945-1954. doi:10.1002/ijc.30533
- Davis, B., Shen, Y., **Poon, C. C.**, Luchman, H. A., Stechishin, O. D., Pontifex, C. S., . . . Terry Fox Research Institute Glioblastoma, C. (2016). Comparative genomic and genetic analysis of glioblastoma-derived brain tumor-initiating cells and their parent tumors. *Neuro Oncol*, 18(3), 350-360. doi:10.1093/neuonc/nov143
- MacLellan, C. L., Silasi, G., **Poon, C. C.**, Edmundson, C. L., Buist, R., Peeling, J., & Colbourne, F. (2008). Intracerebral hemorrhage models in rat: comparing collagenase to blood infusion. *J Cereb Blood Flow Metab*, 28(3), 516-525. doi:10.1038/sj.jcbfm.9600548

Selected Abstracts/Presentations

- Poon, C. C.** PDGFRB+ Perivascular stromal cells underly microvascular proliferation and are associated with immunosuppression, progression, and worsened outcome in glioma. **One of four competitively selected abstracts** for oral presentation at the 2023 New York Academy of Sciences Frontiers in Cancer Immunotherapy Symposium. New York, New York, USA. May 2-4, 2023.
- Poon, C. C.** New approaches in immunotherapy: glioma-associated microglia and macrophages. **Invited presentation** at the 20th Annual World Congress of the Society of Brain Mapping and Therapeutics. Los Angeles, California, USA. February 16-19, 2023. *Declined*.
- Poon, C.C.** Getting started with clustering in Seurat. **Invited lecturer** for the “Computational systems biology of cancer” course. Loma Linda University. Loma Linda, California, USA. August 5, 2022.
- Poon, C.C.** The immune microenvironment of brain tumors. **Invited presentation** at the Precision Oncology Experimental Therapeutics (POET) Congress. Calgary, AB, Canada. April 4 and 5, 2019.
- Poon, C.C.**, Gordon M. K. P., Liu K., Yang R., Sarkar S., Mirzaei R., Ahmad S. T., Hughes M. L., Yong V. W., Kelly J. J. P. Single-cell level comparison of histopathologic features and single-cell RNA-seq databases between IDH-MUT and –WT previously untreated glioblastomas reveals distinct innate immune microenvironments that can be exploited for therapeutic gain. Platform presentation during plenary at: 2018 Society for Neuro-Oncology (SNO) Annual Meeting. New Orleans, Louisiana, United States.
- **Received Adult Basic Science Abstract Award**

Poon, C. C., Yang R., Sheikh, T., Liu K., Sarkar S., Yong V. W., Kelly, J. J. 2018. Microglia and macrophages display heterogeneous phenotypes in IDH-mutant and wildtype glioblastomas. Platform presentation at: The 18th Biennial Canadian Neuro-Oncology Meeting. Banff, Alberta, Canada.

- **Ranked a “Top Scoring Abstract”**

Poon, C. C., Sarkar S., Hughes M. L., Blough M., Cairncross J. G., Yong V. W., Kelly J. J. 2016. Inhibition of human glioblastoma brain tumor initiating cells with microglial- and macrophage-derived cytokines. Accepted for poster presentation at: The Hotchkiss Brain Institute’s Annual Poster Competition. Calgary, Alberta, Canada.

- **Won Hotchkiss Brain Institute’s Annual Poster Competition (2nd prize)**

Poon, C. C., Sarkar S., Yong V. W., Kelly J. J. 2016. Using microglial- and macrophage-derived cytokines to alter the infiltrating glioma microenvironment. Platform presentation at: The Alberta Neurosurgical Society Annual Meeting. Banff, Alberta, Canada.

- **Won the Alberta Neurosurgical Society Bryce Weir Award for Basic Science Research**

Poon, C. C., Chow M., Au K., Butcher K. 2012. Timing of hemorrhagic and thromboembolic complications in anticoagulant-associated intracranial hemorrhage. Platform presentation at: the Alberta Neurosurgical Society Annual Meeting. Lake Louise, Alberta, Canada

- **Won the Alberta Neurosurgical Society Bryce Weir Award for Clinical Research**

Teaching

September 18, 2023: helped create the neurosurgical-oncology block exam

Languages

English – Fluent (written and spoken)

Cantonese – Fluent (written and spoken)

Mandarin – Fluent (written and spoken)

Dialect of Zhong Shan – Fluent (written and spoken)