A/Prof Camelia Quek PhD, BAdvSci (Hons I), DipMolBiotech

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Summary Biography

Dr Camelia Quek is a NHMRC Investigator Fellow, Senior Translational Computational Scientist at Melanoma Institute Australia and an Adjunct Associate Professor at the University of Sydney. She originally did a first degree in molecular biology at the University of New South Wales (University Medal) before moving on to do a PhD in transcriptomics and bioinformatics at the University of Melbourne (Sawyer Medal). She specialises in clinical computational biology and has wide experience in clinical multi-omics analytics and spatial data integration. Dr Quek's early research has made significant advances in understanding cancer biology and tumour microenvironment in melanoma patients treated with immunotherapy, using gene expression profiles to discover biomarkers in response to cancer therapies, and single-cell multi-omics to guide clinical decision-making. Her research impact and contributions are recognised in Australia and worldwide. Over the past years, she has received several prestigious awards including 2022 CINSW Premier's Awards for Wildfire Highly Cited Publication (co-first authors, Cancer Cell 2019), 2021 10x Millennium Science Start Single Cell Award, and 2017 CINSW Premier's Awards for Excellence in Translational Research Team. She has also received 3X Best Poster Winner and 2X Best Oral Talk at both international and national conferences. Passionate about translating research findings into clinical and industrial applications, she actively collaborates with clinicians and industry partners to advance new knowledge in the design of biomarker panels and therapeutic targets.

EMPLOYMENT AND APPOINTMENT

2025 – Present	NHMRC Investigator Fellow – Melanoma Institute Australia
2025 – Present	Adjunct Associate Professor – The University of Sydney
2025 – Present	Editorial Board Member – Nature Portfolio
2021 – 2024	Cancer Institute NSW Early Career Fellow – Melanoma Institute Australia
2021 – 2025	Honorary Senior Research Fellow / Adjunct Senior Lecturer – The University of Sydney
2016 – 2021	Postdoctoral Scientist (Oncology Bioinformatics) – Melanoma Institute Australia
2016 – 2021	Research Affiliate – The University of Sydney

EDUCATION AND HONOURS

2012 – 2016	Doctor of Philosophy in Medicine and Health Science, The University of Melbourne ***Sawyer Medal in Outstanding PhD and Melbourne Research Scholar***
2009 – 2011	Bachelor of Advanced Science (Hons Class 1) – Major in Molecular Biology, University of New South Wales ***University Medal and Golden Jubilee Scholar***
2006 – 2009	Diploma in Molecular Biotechnology with Merit, Nanyang Polytechnic ***Gold Medal***

KEY PUBLICATIONS *co-first authors

1. Bai X, Attrill GH, Gide TN, Ferguson PM, Nahar KJ, Shang P, Vergara IA, Palendira U, Pires da Silva I, Carlino MS, Menzies AM, Long GV, Scolyer RA, Wilmott JS, **Quek C**. Stroma-infiltrating T cell spatiotypes define immunotherapy outcomes in adolescent and young adult patients with melanoma. *Nature Communications 2024*;15(1):3014. **[Article Influence Score from Clarivate = 5.8]**
2. **Quek C***, Pratapa A*, Bai X*, Al-Eryani G*, Pires da Silva I*, Mayer A, Bartonicek N, Harvey K, Maher NG, Conway JW, Kasalo RJ, Ben Cheikh B, Braubach O, Palendira U, Saw RPM, Stretch JR, Shannon KF, Menzies AM, Scolyer RA, Long GV, Swarbrick A, Wilmott JS. Single-cell spatial multiomics reveals tumor microenvironment vulnerabilities in cancer resistance to immunotherapy. *Cell Reports 2024*;43(7):114392. **[Scopus = Top Q1 in Biochemistry, Genetics and Molecular Biology research]**

3. Lee H*, Ferguson AL*, **Quek C*,** Vergara IA, Pires daSilva I, Allen R, Gide TN, Conway JW, Koufariotis LT, Hayward NK, Waddell N, Carlino MS, Menzies AM, Saw RPM, Shklovskaya E, Rizos H, Lo S, Scolyer RA, Long GV, Palendira U, Wilmott JS. Intratumoral CD16+ macrophages are associated with clinical outcomes of patients with metastatic melanoma treated with combination anti-PD-1 and anti-CTLA-4 therapy. ***Clinical Cancer Research 2023***; OF1-2. **[2023 Finalist for UniSyd Outstanding Publication]**
4. Gide, T. N.*, **Quek, C.*,** Menzies, A. M., Tasker, A. T., Shang, P., Holst, J., Madore, J., Lim, S. Y., Velickovic, R., Wongchenko, M., Yan, Y., Lo, S., Carlino, M. S., Guminski, A., Saw, R. P. M., Pang, A., McGuire, H. M., Palendira, U., Thompson, J. F., Rizos, H., Silva, I. P. D., Batten, M., Scolyer, R. A., Long, G. V., and Wilmott, J. S. (2019). Distinct Immune Cell Populations Define Response to Anti-PD-1 Monotherapy and Anti-PD-1/Anti-CTLA-4 Combined Therapy. ***Cancer Cell 2019***; 35, 238-255 e236. **[2022 Cancer Institute NSW Wildfire Highly Cited Publication, and 2023 Highly Cited Paper in Molecular Biology and Genetics from Clarivate's Essential Science Indicators]**
5. Edwards J, Wilmott JS, Madore J, Gide T, **Quek C**, Tasker A, Ferguson A, Chen J, Hewavisenti R, Hersey P, Gebhardt T, Weninger W, Britton W, Saw R, Thompson J, Menzies AM, Long GV, Scolyer RA, Palendira U. "CD103+ tumor-resident CD8+ T cells are associated with improved survival in immunotherapy naive melanoma patients and expand significantly during anti-PD1 treatment." ***Clinical Cancer Research* 2018**; 24, 3036-3045. **[2023 Highly Cited Paper in Clinical Medicine from Clarivate's Essential Science Indicators]**

OVERALL TRACK RECORD

Publications

ORCID: 0000-0002-1244-961X

I have published >40 peer-reviewed articles and 7 invited reviews.

Funding

2026 – 2029	NHMRC Ideas Grant – APP2047363: Unravelling stromal-immune cell crosstalk in chronically inflamed lymph nodes
2025 – 2028	Melanoma Research Alliance Young Investigator Grant – ID 1436714: NeoPlatform: Neoadjuvant translational research platform
2025 – 2031	NHMRC Investigator Grant – APP2033999: Dissecting the cancer ecosystem as a precision medicine approach towards improving patient outcomes with high-risk melanoma
2024 – 2028	NSW Health Early-Mid Career Researcher Grant – Project: Single-cell multi-omics to reveal cancer vulnerabilities in high-risk melanoma patients treated with neoadjuvant immunotherapy
2023 – 2024	Tour de Cure Early Career Research Grant Program – RSP-049-FY2023: Dissecting novel therapeutic resistance in high-risk melanoma patients treated with neoadjuvant immunotherapy
2023 – 2026	NHMRC Ideas Grant – APP2020569: Liver metastases: a niche of resistance and of therapeutic opportunities for all cancers
2021 – 2024	Cancer Institute NSW Early Career Research Fellowship – ECF1153: Dissecting novel immunotherapeutic resistance and progression in advanced melanoma
2020 – 2023	Melanoma Research Alliance Grant – MRA683873: Effective therapies for patients with high risk in-transit disease
2020 – 2021	University of Sydney Charles Perkins Centre Early- and Mid-Career Researchers Seed Funding Award – Project: Identifying novel immune checkpoint targets for immunotherapy in melanoma patients
2020 – 2021	Sydney Catalyst Pilot and Seed Funding Award – Project: Improving survival in melanoma by matching optimal drug therapy for individual patients

2020 – 2023	CLEARbridge Foundation Grant – Project: Single cell RNAseq of melanoma biopsies of PRADO trial

Awards and Prizes

2023	Best Oral Talk at International Society for Computational Biology ASCS 2023, virtual, worldwide
2022	CINSW Premier's Award for Wildfire Highly Cited Publication, Australia
2021	10x Millennium Science Start Single Cell Award, Australia
2020	Immuno-Oncology Summit Europe – Invited Speaker Award
2018	Best Poster – IAP (International Academy of Pathology) conference
2017	NSW Premier's Awards for Outstanding Cancer Research (Excellence in Translational Research to MIA Research Team) - Dr Camelia Quek
2017	Sawyer Medal in Outstanding Research Achievements PhD students, The University of Melbourne
2017	Most Outstanding Oral Presentation – Anti-Cancer Agents and Drug Development 1 session, The University of Sydney Cancer Research Network 2017 Postgraduate & ECR Cancer Research Symposium, Australia
2017	Best Poster – Immunotherapy@Brisbane Conference, Australia
2014	Poster Prize Winner – Wellcome Trust Computational RNA Biology Conference
2011	University Medal in Molecular Biology, University of New South Wales
2011	Undergraduate Student Encouragement Award, University of New South Wales, Australia (Australian Society for Microbiology NSW-ACT)
2009	Gold Medal in Molecular Biotechnology, Nanyang Polytechnic

Professional activities

2025 – Present	Editorial Board Member of Communications Biology
2023 – Present	Associate Editor of Molecular Carcinogenesis
2023 – Present	Special Issue Editor for International Journal of Molecular Sciences
2020 – Present	Cancer Research Network - The University of Sydney (Steering Committee)
2016 – Present	Ambassador for European Association for Cancer Research
2016 – Present	Reviewer (Nature, Cell, Frontiers, International Journal of Molecular Sciences, Modern Pathology, Pigment Cell Melanoma Research)

2025 – Present	Editorial Board Member for Communications Biology, Nature Portfolio
2024 – Present	Member, Grant Reviewer Panel at the University of Sydney Research Grants Peer Review Academy
2024 – Present	Editorial Board Member in Discovery Oncology
2023 – Present	Associate Editor in Molecular Carcinogenesis
2023 – Present	Special Issue Editor in International Journal of Molecular Sciences (IJMS)
2022 – Present	Steering Committee Member in Single Cell and Spatial Biology Node, Charles Perkins Centre, University of Sydney
2021 – 2023	Special Issue Editor in Genes Journal
2020 – Present	Steering Committee Member at the Cancer Research Network, University of Sydney
2020 – Present	Editorial Reviewer for Frontiers in Oncology and Frontiers in Digital Health
2016 – Present	Reviewer (Nature, Cell, Frontiers, International Journal of Molecular Sciences, Modern Pathology, Pigment Cell Melanoma Research)
2016 – Present	Grant Reviewer for CINSW and NHMRC
2016 – Present	Ambassador for European Association for Cancer Research (EACR)
2016 – 2019	Sydney Representative for COMBINE (Australian Bioinformatics and Computational Biology Society / ISCB)
2016 – 2017	Co-Lead, Sponsorship at Australian Society for Medical Research NSW

2015 – 2019	Abstract Reviewer for Australian Society for Medical Research Student Research Symposium (Victoria)
2015	Conference Assistant at ComBio2015
2013 – 2015	Student Research Symposium Co-organiser at Australian Society for Medical Research (Victoria)
2013 – 2014	Treasurer at Biochemists and Molecular Biologists in the Bio21 Institute (BAMBII), University of Melbourne

Mentorship

2016 – Present Supervisor for PhD, Honours, MD-PhD students – The University of Sydney
- Lead supervisor for PhD students; completed 3 PhD students with merit.
- Lead/Co-supervisor for Honours students; completed 5 Honours students awarded with all High Distinction Score and first-class Honours, and 1 as University Medal.

Contributions to analysis tools for research

- Multimodal Integration Toolkit – https://github.com/cameliaquek/singlecell_spatial_multiomics
- FunRich: Functional Enrichment Analysis Tool – http://www.funrich.org
- iSRAP: Integrated Small RNA Analysis Pipeline – https://israp.sourceforge.net

Contributions to large datasets for research

- EGAS50000000339: https://ega-archive.org/studies/EGAS50000000339
- EGAS50000000238: https://ega-archive.org/studies/EGAS50000000238
- PRJEB52880: https://www.ebi.ac.uk/ena/browser/view/PRJEB52880
- EGAS00001006977: https://ega-archive.org/studies/EGAS00001006977
- PRJEB54666: https://www.ebi.ac.uk/ena/browser/view/PRJEB54666
- EGAS00001006982: https://ega-archive.org/studies/EGAS00001006982
- PRJEB45846: https://www.ebi.ac.uk/ena/browser/view/PRJEB45779
- PRJEB23709: https://www.ebi.ac.uk/ena/browser/view/PRJEB23709

Media

- MIA's LabLife blog series – Dr Camelia Quek https://melanoma.org.au/news/camelia-quek-lablife/
- Scientific Malaysian Magazine Issue 14 – Cancer. Article entitled "Untangling the genetic mysteries of cancer using computational tools") https://www.scientificmalaysian.com/2018/02/04/scientific-malaysian-magazine-issue-14/
- iSRAP – a one-touch research tool for rapid profiling of small RNA-seq data https://www.rna-seqblog.com/israp-a-one-touch-research-tool-for-rapid-profiling-of-small-rna-seq-data/

Impact of previous research

My research has biological and clinical impact. I was the first co-author for the Cancer Cell (IF38.5), first or mid senior co-authors for 6xClinical Cancer Research and Cell Reports, and co-last senior author in Nature Communications to report EOMES+CD69+CD45RO+ cells, intratumoural natural killer, T cells and stoma-infiltrating immune cells are sensitive or resistance to immune-based drugs. The signature-driven response markers are now translated into our Personalised Immunotherapy Program at Melanoma Institute Australia. Clinicians can now use these markers to manage treatment decision making for patients.