

# Mark Raymond Dowling Curriculum Vitae

## Personal Details

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**Name:** Mark Raymond Dowling



**Institution:** Department of Clinical Haematology  
Peter MacCallum Cancer and Royal Melbourne Hospital,

## Career Statement

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I am an early-mid career clinician-scientist (0.3 FTE Clinical/0.7 FTE Research) at Peter MacCallum Cancer Centre and Royal Melbourne Hospital. I have broad range of skills across a range of disciplines, placing me in the perfect position to generate novel insights from this interdisciplinary project. I am currently consultant haematologist within the CAR-T stream, and a senior postdoctoral fellow in the Centre of Excellence for Cellular Immunotherapy Translational Laboratory. My research position is supported by a Victorian Cancer Agency (VCA) mid-career fellowship, *Adjuvant immunotherapy to improve the efficacy, durability, and cost effectiveness of CAR T-cell therapy for aggressive lymphoma* (2022–2026).

I am an emerging leader in the clinical application of CAR T-cell therapy and translational research in Australia. Over the past year, I have presented our institutional and the first substantive cut of Australian national real-world data for CAR T-cell therapy in aggressive lymphoma at 3 national and regional meetings, in collaboration with the Australia and New Zealand Transplantation and Cellular Therapy (ANZTCT) Registry. The very favourable outcomes in the Australian real-world setting compared with the pivotal trials have positively influenced the perception and uptake of the therapy nationally. I have developed and implemented two investigator-initiated CAR-T clinical trials under the guidance of senior mentors, (1) *EpLCART: A Phase II Open-Label, Multi-Centre Study of Minimal Residual Disease-Directed Consolidation with Epcoritamab or Epcoritamab-Lenalidomide-Rituximab Post Anti-CD19 CAR T-Cell Therapy for Large B-Cell Lymphoma* (open and recruiting at 6 CAR-T centres in Australia), (2) *CARAMEL: CAR-T cell therapy in Relapsed/Refractory Myeloma with Extramedullary disease – an in vivo imaging and molecular monitoring study* (a novel PET-MRI imaging study using nanoparticle technology developed between Peter Mac and collaborators). In addition, I lead a national multi-centre observational study of CAR T-cell therapy that is collecting high-quality, granular, real-world data with the aim of developing predictive models for efficacy and toxicity.

Having previously completed a Ph.D. in theoretical physics and postdoctoral training in the Immunology Division at the Walter and Eliza Hall Institute (WEHI), I have a firm grounding in basic science and collaborations necessary for successful translational research. Despite dedicating the majority of my time to clinical medicine since 2009, I have published 33 original research articles (2 as senior author, 14 as first author), 2 reviews, and 1 book chapter. My work is published in top-tier journals including *Science* (3 articles), *Proceedings of the National Academy of Sciences* (2 articles), *Blood*, *Science Immunology*, and *Immunity*, and have amassed over 3200 citations (over 1900 since 2019) with an average of 97 citations per paper and a h-index of 26.

## Tertiary Education

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2009 – 2013                      **Bachelor of Medicine, Bachelor of Surgery, Honours Class I**  
The University of Melbourne

2004 – 2007                      **Doctor of Philosophy (Physics)**  
The University of Queensland

2003	<b>Bachelor of Science, Honours Class I (Physics)</b> The University of Queensland
2000 – 2002	<b>Bachelor of Science (Physics) / Bachelor of Arts (Mathematics)</b> The University of Queensland

### **Postgraduate Medical Education**

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Aug. 2018 – Jul. 2021	<b>Advanced Training in Clinical Haematology</b> Royal Australasian College of Physicians
Jan. 2015 – Aug. 2018	<b>Basic Physician Training</b> Royal Australasian College of Physicians

### **Clinical Appointments**

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Feb. 2023 – present	<b>Consultant Haematologist</b> CAR-T Stream Peter MacCallum Cancer Centre & Royal Melbourne Hospital
Jan. 2021 – Jan. 2023	<b>Cellular Therapies Clinical Fellow</b> Peter MacCallum Cancer Centre & Royal Melbourne Hospital
Aug 2018 – Jan. 2021	<b>Clinical Haematology Registrar</b> Peter MacCallum Cancer Centre & Royal Melbourne Hospital
2017 – Jul. 2018	<b>Medical Registrar and Basic Physician Trainee</b> Royal Brisbane and Women’s Hospital
2014 – 2015	<b>Hospital Medical Officer and Basic Physician Trainee</b> Melbourne Health

### **Professional Affiliations**

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2021 – present	<b>Fellow of the Royal Australasian College of Physicians</b>
2019 – present	<b>Member of the Australasian Leukemia and Lymphoma Group</b>
2018 – present	<b>Member of the American Society for Hematology</b>
2015 – present	<b>Member of the Haematology Society of Australia and New Zealand</b>

### **Academic Appointments**

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Feb. 2023 – present	<b>Postdoctoral Research Fellow</b> Cancer Immunology Division and Centre of Excellence for Cellular Immunotherapy Translational Laboratory Peter MacCallum Cancer Centre
2022 – present	<b>Honorary Senior Research Fellow</b> Sir Peter MacCallum Department of Oncology, The University of Melbourne
Dec. 2020 – present	<b>External Affiliate</b> Fred Hutchinson Cancer Center
2016 – present	<b>Visiting Scientist</b> Immunology Division, The Walter and Eliza Hall Institute of Medical Research
2010 – present	<b>Honorary Senior Research Fellow (2017 – present)</b> <b>Honorary Research Fellow (2010 – 2016)</b> Department of Medical Biology, The University of Melbourne
2017 – 2018	<b>Honorary Lecturer</b> School of Medicine, Royal Brisbane Clinical Unit, The University of Queensland

May – Jul. 2016	<b>Research Assistant and Clinical Observership</b> Leukemia and bone marrow transplant service, Massachusetts General Hospital Cancer Center
2007 – 2015	<b>Postdoctoral Fellow</b> Immunology Division, The Walter and Eliza Hall Institute of Medical Research (full-time Feb. 2007 to Jul. 2009, part-time Jul. 2009 to Dec. 2015)
2004 – 2006	<b>Ph.D. Student</b> School of Physical Sciences, The University of Queensland

### Investigator-Initiated Trials

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May 2024 – Present	<i>A Phase II Open-Label, Multi-Centre Study of Minimal Residual Disease-Directed Consolidation with Epcoritamab or Epcoritamab-Lenalidomide-Rituximab Post Anti-CD19 CAR T-Cell Therapy for Large B-Cell Lymphoma (EpLCART)</i> Co-investigator Principal Investigator: Prof. Michael Dickinson Sponsor: Peter MacCallum Cancer Centre Collaborator: Abbvie Number of patients: 40
Feb. 2024 – Present	<i>Clinical, laboratory and radiological predictive factors for safety and efficacy of chimeric antigen receptor (CAR) T-cell therapy in Australia: A multi-centre real-world study (CARTRW)</i> Principal Investigator Sponsor: Peter MacCallum Cancer Centre Number of patients: Unlimited (ongoing observational study)
Dec 2023 – Present	<i>CAR-T cell therapy in Relapsed/Refractory Myeloma with Extramedullary disease – an in vivo imaging and molecular monitoring study (CARMEL)</i> Co-investigator Principal Investigator: Prof. Simon Harrison Sponsor: Peter MacCallum Cancer Centre Collaborators: Janssen and Legend Biotech Number of patients: 10

### Research Grants and Fellowships

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2025 – 2027	<b>Barrie Dalgleish Centre for Myeloma and Related Blood Cancers 2024 Funding Round</b> <i>Effect of bridging radiotherapy to extramedullary sites of multiple myeloma on outcomes of CAR T-Cell therapy, assessed clinically and by sequential 89Zr-CD8 T-Cell PET imaging</i> Chief Investigator D Chief Investigator A: Prof. Michael MacManus Departments of Radiation Oncology, Peter MacCallum Cancer Centre Department of Clinical Haematology, Royal Melbourne Hospital and Peter MacCallum Cancer Centre Value: \$A500,000
2025	<b>Gilead Australia Fellowship</b> <i>Clinical, laboratory and radiological predictive factors for safety and efficacy of chimeric antigen receptor (CAR) T-cell therapy in Australia: A multi-centre real-world study</i> Principal Investigator Department of Clinical Haematology, Royal Melbourne Hospital and Peter MacCallum Cancer Centre Centre of Excellence for Cellular Immunotherapy Translational Laboratory, Peter MacCallum Cancer Centre Value: \$A60,000

- 2022 – 2026 **Victorian Cancer Agency Mid-Career Research Fellowship**  
*Adjuvant immunotherapy to improve the efficacy, durability, and cost effectiveness of CAR T-cell therapy for aggressive lymphoma*  
Principal Investigator  
Department of Clinical Haematology, Royal Melbourne Hospital and Peter MacCallum Cancer Centre  
Centre of Excellence for Cellular Immunotherapy Translational Laboratory, Peter MacCallum Cancer Centre  
Value: \$A700,000
- 2022 – 2025 **The Leukemia and Lymphoma Society Translational Research Program**  
*Improving CAR T-cell therapy outcomes for patients with aggressive lymphoma and multiple myeloma*  
Associate Investigator  
Principal Investigator: A/Prof Jane Oliaro  
Cancer Immunology Division and Centre of Excellence for Cellular Immunotherapy Translational Laboratory, Peter MacCallum Cancer Centre  
Sir Peter MacCallum Department of Oncology, The University of Melbourne  
Value: \$US750,00 (~\$A1.14M)
- 2024 – 2026 **Snowdome Foundation Multiple Myeloma CAR T-cell Grant**  
*Developing next-generation armoured CAR-T cells for the treatment of multiple myeloma*  
Associate Investigator  
Principal Investigator: A/Prof Jane Oliaro  
Cancer Immunology Division and Centre of Excellence for Cellular Immunotherapy Translational Laboratory, Peter MacCallum Cancer Centre  
Sir Peter MacCallum Department of Oncology, The University of Melbourne  
Value: \$A450,000
- 2016 **MIGA doctors-in-training research grant**  
*Neurologic complications after allogeneic hematopoietic stem cell transplantation: Risk factors and impact*  
To undertake a clinical research project (3 months) in bone marrow transplantation  
Massachusetts General Hospital Cancer Center
- 2014 – 2016 **National Health and Medical Research Council Project Grant, GNT1057831,**  
*A cellular calculus for drug treatment*  
Chief Investigator B  
Immunology Division  
The Walter and Eliza Hall Institute
- 2011 – 2013 **National Health and Medical Research Council Project Grant, GNT1010654,**  
*Quantitative survival regulation by T cells*  
Chief Investigator B  
Immunology Division  
The Walter and Eliza Hall Institute
- 2009 – 2013 **National Health and Medical Research Council Program Grant, GNT0575500,**  
*Control of the Immune Response*  
Postdoctoral research fellow (named)  
Immunology Division  
The Walter and Eliza Hall Institute
- 2009 – 2014 **NHMRC Peter Doherty – Biomedical Australian Fellowship, GNT0516788,**  
*Using computers to understand the immune system*  
Postdoctoral research fellow  
Immunology Division  
The Walter and Eliza Hall Institute
- 2004 – 2006 **Australian Postgraduate Award**  
School of Physical Sciences  
The University of Queensland

## Leadership and Service

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Dex. 2024 - Present	<b>Student Advisory Committee</b> Clinician Co-Chair Peter MacCallum Cancer Centre
Sep. 204 – Nov. 2024	<b>Peter MacCallum Cancer Centre Emerging Leader Program</b> Project: <i>Consultation on redesign of data collection and management for autologous stem cell transplant and CAR-T services</i>
Oct. 2024 - Present	<b>Research Education Training Committee</b> Member Peter MacCallum Cancer Centre
Sep. 2023	<b>Peter MacCallum Cancer Centre Topics in Cancer Series</b> Invited Presenter, together with A/Prof Jane Oliaro <i>The Evolution of Immunotherapy: Harnessing the power of the immune system to cure cancer patients</i>
May 2023 – Present	<b>Institutional Biosafety Committee</b> Member Peter MacCallum Cancer Centre
May 2023 – Present	<b>Australasian Leukemia and Lymphoma Group (ALLG) Myeloma Scientific Working Party</b> Lead, CAR-T and bispecific T-cell engager therapy
Aug. 2021 – Present	<b>eviQ Cellular Therapies Reference Committee</b> Cancer Institute of New South Wales

## Research Supervision

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2023 – present	<b>Mr Jonathan Naddaf, Ph.D. Candidate</b> University of Melbourne and Cancer Immunology Division, Peter MacCallum Cancer Centre Co-supervisor with A/Prof. Jane Oliaro
2023 – present	<b>Mr Kenneth Wu, Ph.D. Candidate</b> University of Melbourne and Immunology Division, The Walter and Eliza Hall Institute Co-supervisor with Prof Philip Hodgkin, Dr Susanne Heinzel and Dr Evan Thomas
2022 – present	<b>Dr Jeremy Er, Ph.D. Candidate</b> University of Melbourne and Inflammation Division, The Walter and Eliza Hall Institute Co-supervisor with A/Prof. Edwin Hawkins and Prof. Simon Harrison
2021	<b>Mr Harry Dempsey, Honours Class I</b> University of Melbourne and Immunology Division, The Walter and Eliza Hall Institute Co-supervisor with Dr Susanne Heinzel and Prof. Philip Hodgkin
2020	<b>Mr Edward Dann, Honours Class I</b> University of Melbourne and Immunology Division, The Walter and Eliza Hall Institute Co-supervisor with Prof. Philip Hodgkin and Prof. Daniel Gray

## Academic Awards and Prizes

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2013	<b>The Robert Andrew Stirling Prize</b> <i>For the highest course aggregate at the completion of the medical course at the Royal Melbourne Hospital Clinical School</i>
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2013	<b>The Allison Howorth Prize</b> <i>For the highest mark in the Rheumatology exam for final year students</i>
2010	<b>Thermo Fisher Scientific prize</b> <i>Runner-up, Immunology and Cell Biology publication of the year, “Modelling naïve T cell homeostasis: consequences of heritable cellular lifespan during ageing”</i>
2004	<b>The University of Queensland Graduate of the Year</b> <i>Awarded to the student completing a four-year degree at the University of Queensland with the highest overall achievement</i>
2004	<b>University Medal</b> <i>The University of Queensland</i>
2003	<b>Australian Institute of Physics (Queensland branch) Prize</b> <i>For the highest aggregate mark by an Honours student in physics at a Queensland university</i>
2003	<b>The Duncan McNaughton Scholarship</b> <i>For the highest achievement over all courses required to complete the BSc degree</i>
2001	<b>The Priest Memorial Prize</b> <i>Awarded to the student who showed the greatest proficiency in MATH2100</i>
2000	<b>The John Black Prize</b> <i>Awarded to the male student who achieved the highest overall standard during his first year of enrolment at the University of Queensland</i>
2000	<b>The Maude Walker Prize</b> <i>Awarded for the greatest proficiency in the first year of enrolment for the degree of Bachelor of Science at the University of Queensland</i>

#### **Selected Research Presentations**

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Dec. 2024	<b>American Society for Hematology 66<sup>th</sup> Annual Meeting, San Diego</b> <u>Selected oral presentation:</u> CAR-T cell therapy in Advanced Myeloma with Extramedullary disease – an in vivo imaging and molecular monitoring study (CARAMEL): first results of Cu-64 radiolabelled nanoparticle PET-CT and PET-MRI
Aug. 2024	<b>5<sup>th</sup> National Myeloma Workshop, virtual event hosted from Melbourne, Australia</b> <u>Oral presentation:</u> Early tracking of cilta-cel to medullary and extramedullary myeloma visualised using nanoparticle loading and dual PET-MRI imaging (awarded best oral presentation)
Apr. 2024	<b>The Dynamics of Cell Fate Decision, Reykjavik, Iceland</b> <u>Invited oral presentation:</u> Mathematical modelling in the clinic: predicting the response of chronic lymphocytic leukemia to BH3-mimetics
Nov. 2023	<b>Blood (Haematology Society of Australia and New Zealand Annual Meeting), Melbourne</b> <u>Oral presentation:</u> Single-institution outcomes of standard-of-care chimeric antigen receptor CAR T-cell therapy for relapsed/refractory large B-cell lymphoma in third-line or beyond: an Australian real-world experience
Aug. 2023	<b>International Society for Cellular Therapies (ISCT) Australasian branch annual meeting, Perth</b> <u>Invited oral presentation:</u> Real-world Australian outcomes with CAR T-cell therapy for aggressive lymphoma
Sep. 2020	<b>3<sup>rd</sup> National Myeloma Workshop, virtual event hosted from Melbourne, Australia</b> <u>Oral presentation:</u> Long-term follow-up of LITVACC: A Phase 2 trial of autologous stem cell

- Aug. 2016                    **International Congress of Immunology, Melbourne, Australia**  
Oral presentation: *Regulatory T cells suppress effector T cell proliferation by limiting division destiny*
- Jul. 2016                    **Dana Faber Cancer Institute, Department of Cancer Immunology and Virology**  
Oral presentation: *Quantitative methods for studying the adaptive immune response – insights into signal integration and cell fate choice at the single-cell level*
- Oct. 2015                    **Annual Meeting of the Haematology Society of Australia and New Zealand, Australia and New Zealand Society of Blood Transfusion and the Australasian Society of Thrombosis and Haemostasis, Adelaide, Australia**  
Oral presentation, *A mathematical model to describe drug effects on cell division, death and differentiation in the immune system and cancer*
- Dec. 2012                    **The Australasian Society for Immunology 42<sup>nd</sup> Annual Scientific Meeting, Melbourne, Australia**  
Oral presentation: *Competition and censorship of stochastic processes as a mechanism for cellular differentiation*
- Jun. 2008                    **RIKEN Research Centre for Allergy and Immunology International Summer Program, Yokohama, Japan**  
Oral presentation: *Quantifying Regulatory T Cell Function*

## Publications

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### Peer-Reviewed Journal Articles

1. Kittai, A.S., Bond, D., Huang, Y., Bhat, S.A., Blyth, E., Byrd, J.C., Chavez, J.C., Davids, M.S., Dela Cruz, J.P., Dowling, M.R., Duffy, C., Ho, C., Jacobson, C., Jaglowski, S., Jain, N., Lin, K.H., Miller, C., McCarthy, C., Omer, Z., Parry, E., Rai, M., Rogers, K.A., Saha, A., Schachter, L., Scott, H., Senapati, J., Shadman, M., Siddiqi, T., Stephens, D.M., Vanguru, V., Wierda, W., Woyach, J.A. & Thompson, P.A. Anti-CD19 Chimeric Antigen Receptor T-Cell Therapy for Richter Transformation: An International, Multicenter, Retrospective Study. *J Clin Oncol* **42**, 2071-2079 (2024).
2. Robinson, M.J., Ding, Z., Dowling, M.R., Hill, D.L., Webster, R.H., McKenzie, C., Pitt, C., O'Donnell, K., Mulder, J., Brodie, E., Hodgkin, P.D., Wong, N.C., Quast, I. & Tarlinton, D.M. Intrinsically determined turnover underlies broad heterogeneity in plasma-cell lifespan. *Immunity* **56**, 1596-1612 e1594 (2023).
3. Robinson, M.J., Dowling, M.R., Pitt, C., O'Donnell, K., Webster, R.H., Hill, D.L., Ding, Z., Dvorscek, A.R., Brodie, E.J., Hodgkin, P.D., Quast, I. & Tarlinton, D.M. Long-lived plasma cells accumulate in the bone marrow at a constant rate from early in an immune response. *Sci Immunol* **7**, eabm8389 (2022).
4. Stewart, T., Dowling, M., Janson, B., Siderov, J., Xie, J., Grigg, A. & Khot, A. Acute kidney injury in patients receiving high-dose etoposide phosphate as conditioning prior to hematopoietic stem cell transplantation in hematologic malignancies may be associated with elevated body mass index. *Leukemia & lymphoma* **64**, 253-255 (2023).
5. Stolz, R.G., Dowling, M.R., Lin, B.B., Mason, K. & Muhi, S. Strongyloides hyperinfection: a preventable complication of immunosuppression. *Med J Aust* **216**, 561-562 (2022).
6. Lelliott, E.J., Ramsbottom, K.M., Dowling, M.R., Shembrey, C., Noori, T., Kearney, C.J., Michie, J., Parish, I.A., Jordan, M.A., Baxter, A.G., Young, N.D., Brennan, A.J. & Oliaro, J. NKG7 Enhances CD8+ T Cell Synapse Efficiency to Limit Inflammation. *Front Immunol* **13**, 931630 (2022).
7. Chappaz, S., Law, C.W., Dowling, M.R., Carey, K.T., Lane, R.M., Ngo, L.H., Wickramasinghe, V.O., Smyth, G.K., Ritchie, M.E. & Kile, B.T. Germline heterozygous mutations in Nxf1 perturb RNA metabolism and trigger thrombocytopenia and lymphopenia in mice. *Blood advances* **4**, 1270-1283 (2020).
8. Dowling, M.R., Kan, A., Heinzl, S., Marchingo, J.M., Hodgkin, P.D. & Hawkins, E.D. Regulatory T Cells Suppress Effector T Cell Proliferation by Limiting Division Destiny. *Front Immunol* **9**, 2461 (2018).
9. Dowling, M.R., Li, S., Dey, B.R., McAfee, S.L., Hock, H.R., Spitzer, T.R., Chen, Y.B. & Ballen, K.K. Neurologic complications after allogeneic hematopoietic stem cell transplantation: risk factors and impact. *Bone marrow transplantation* **53**, 199-206 (2018).
10. Lebois, M., Dowling, M.R., Gangatirkar, P., Hodgkin, P.D., Kile, B.T., Alexander, W.S. & Josefsson, E.C. Regulation of platelet lifespan in the presence and absence of thrombopoietin signaling. *Journal of thrombosis and haemostasis : JTH* **14**, 1882-1887 (2016).
11. Kan, A., Pavlyshyn, D., Markham, J.F., Dowling, M.R., Heinzl, S., Zhou, J.H., Marchingo, J.M. & Hodgkin, P.D. Stochastic Measurement Models for Quantifying Lymphocyte Responses Using Flow Cytometry. *PLoS One* **11**, e0146227 (2016).

12. Marchingo, J.M., Kan, A., Sutherland, R.M., Duffy, K.R., Wellard, C.J., Belz, G.T., Lew, A.M., Dowling, M.R., Heinzel, S. & Hodgkin, P.D. T cell signaling. Antigen affinity, costimulation, and cytokine inputs sum linearly to amplify T cell expansion. *Science* **346**, 1123-1127 (2014).
13. Dowling, M.R., Kan, A., Heinzel, S., Zhou, J.H., Marchingo, J.M., Wellard, C.J., Markham, J.F. & Hodgkin, P.D. Stretched cell cycle model for proliferating lymphocytes. *Proceedings of the National Academy of Sciences of the United States of America* **111**, 6377-6382 (2014).
14. Chakravorty, R., Rawlinson, D., Zhang, A., Markham, J., Dowling, M.R., Wellard, C., Zhou, J.H. & Hodgkin, P.D. Labour-efficient in vitro lymphocyte population tracking and fate prediction using automation and manual review. *PLoS ONE* **9**, e83251 (2014).
15. Hawkins, E.D., Turner, M.L., Wellard, C.J., Zhou, J.H., Dowling, M.R. & Hodgkin, P.D. Quantal and graded stimulation of B lymphocytes as alternative strategies for regulating adaptive immune responses. *Nat Commun* **4**, 2406 (2013).
16. Dowling, M.R., Josefsson, E.C., Henley, K.J., Kile, B.T. & Hodgkin, P.D. A Model for Studying the Hemostatic Consumption or Destruction of Platelets. *PLoS ONE* **8**, e57783 (2013).
17. Duffy, K.R., Wellard, C.J., Markham, J.F., Zhou, J.H., Holmberg, R., Hawkins, E.D., Hasbold, J., Dowling, M.R. & Hodgkin, P.D. Activation-induced B cell fates are selected by intracellular stochastic competition. *Science* **335**, 338-341 (2012).
18. Kan, A., Chakravorty, R., Bailey, J., Leckie, C., Markham, J. & Dowling, M.R. Automated and semi-automated cell tracking: addressing portability challenges. *Journal of microscopy* **244**, 194-213 (2011).
19. Josefsson, E.C., James, C., Henley, K.J., Debrincat, M.A., Rogers, K.L., Dowling, M.R., White, M.J., Kruse, E.A., Lane, R.M., Ellis, S., Nurdén, P., Mason, K.D., O'Reilly, L.A., Roberts, A.W., Metcalf, D., Huang, D.C. & Kile, B.T. Megakaryocytes possess a functional intrinsic apoptosis pathway that must be restrained to survive and produce platelets. *The Journal of experimental medicine* **208**, 2017-2031 (2011).
20. Dowling, M.R., Josefsson, E.C., Henley, K.J., Hodgkin, P.D. & Kile, B.T. Platelet senescence is regulated by an internal timer, not damage inflicted by hits. *Blood* **116**, 1776-1778 (2010).
21. Dowling, M.R. & Hodgkin, P.D. Why does the thymus involute? A selection-based hypothesis. *Trends in immunology* **30**, 295-300 (2009).
22. Dowling, M.R. & Hodgkin, P.D. Modelling naive T-cell homeostasis: consequences of heritable cellular lifespan during ageing. *Immunology and cell biology* **87**, 445-456 (2009).
23. Dowling, M.R. & Nielsen, M.A. The geometry of quantum computation. *Quantum Information & Computation* **8**, 861-899 (2008).
24. Hawkins, E.D., Turner, M.L., Dowling, M.R., van Gend, C. & Hodgkin, P.D. A model of immune regulation as a consequence of randomized lymphocyte division and death times. *Proceedings of the National Academy of Sciences of the United States of America* **104**, 5032-5037 (2007).
25. Dowling, M.R., Davis, M.J., Drummond, P.D. & Corney, J.F. Monte Carlo techniques for real-time quantum dynamics. *Journal of Computational Physics* **220**, 549-567 (2007).
26. Nielsen, M.A., Dowling, M.R., Gu, M. & Doherty, A.C. Quantum computation as geometry. *Science* **311**, 1133-1135 (2006).
27. Nielsen, M.A., Dowling, M.R., Gu, M. & Doherty, A.C. Optimal control, geometry, and quantum computing. *Physical Review A* **73**(2006).
28. Dowling, M.R., Doherty, A.C. & Wiseman, H.M. Entanglement of indistinguishable particles in condensed-matter physics. *Physical Review A* **73**(2006).
29. Dowling, M.R., Bartlett, S.D., Rudolph, T. & Spekkens, R.W. Observing a coherent superposition of an atom and a molecule. *Physical Review A* **74**(2006).
30. Berry, D.W. & Dowling, M.R. Two qubits can be entangled in two distinct temperature regions. *Physical Review A* **74**(2006).
31. Dowling, M.R., Milutinovic, D. & Hodgkin, P.D. Modelling cell lifespan and proliferation: is likelihood to die or to divide independent of age? *Journal of the Royal Society Interface* **2**, 517-526 (2005).
32. Dowling, M.R., Drummond, P.D., Davis, M.J. & Deuar, P. Time-reversal test for stochastic quantum dynamics. *Physical review letters* **94**, 130401 (2005).
33. Dowling, M.R., Doherty, A.C. & Bartlett, S.D. Energy as an entanglement witness for quantum many-body systems. *Physical Review A* **70**(2004).

#### Commentaries

34. Dowling, M.R. & Turtle, C.J. ICANS prophylaxis: potentially transformative but elusive. *Blood Adv* **7**, 6782-6784 (2023).
35. Dowling, M.R. & Dickinson, M. Post CAR-T cytopenia: poorly understood and clinically challenging. *Leukemia & lymphoma* **63**, 1774-1776 (2022).
36. Dowling, M.R. & Ballen, K.K. Neurological Complications after Allogeneic Transplantation - Can We Do Better? *Acta haematologica*, 1-2 (2019).

#### Book Chapter

37. Josefsson, E.C., Dowling, M.R., Lebois, M. & Kile, B.T. The Regulation of Platelet Life Span. in *Platelets* (ed. Michelson, A.D.) 51-65 (Academic Press, 2012).