

Conor M. Finlay

SENIOR RESEARCH FELLOW

Trinity Translational Medicine Institute, Trinity College Dublin

+353 857148825 | cofinlay@tcd.ie; conor.finlay@manchester.ac.uk | 0000-0001-8285-0903 | [ORCID](https://orcid.org/0000-0001-8285-0903)
kQ6U7AkAAAJ | [conorisco](https://www.linkedin.com/company/conorisco) | [conorisco](https://twitter.com/conorisco)

Cellular Immunologist and bioinformatician combining molecular, in vivo and translational research

Vision

I am ready to educate the next generation of doctors and scientists and lead my own group to make transformative discoveries.

My research aims to redefine our understanding of macrophages in inflammation. My holistic research view operates at the level of the gene, cell, tissue and organism. I have a particular interest in type 2 immune responses, single cell omics, lung & kidney immunology and autoimmunity. The concepts I uncovered in my recent publication in *Immunity* form the basis of my current grant applications where I will identify factors that control macrophage differentiation and function in inflammation.

Current Roles

SENIOR RESEARCH FELLOW, TRINITY COLLEGE DUBLIN

- I set up "TCD Omics" - single cell RNA-sequencing core service (independent project)
- Myeloid cell dysfunction in COVID-19 (COVID-19 SFI-funded strategic partnership)
- lab management and biomarker research (Trinity Kidney Health Centre with Mark Little).
- Data integration of multi-modal clinical data, supervising development of R package (with Mark Little)
- Longitudinal clinical study design (high parameter (30+) flow cytometry panels) - T cell exhaustion as a predictor of autoimmune relapse (PARADISE, with Mark Little)

HONORARY RESEARCH FELLOW, UNIVERSITY OF MANCHESTER

- Active collaboration on MRC programme grant with Prof. Judith Allen (approx 25% FTE).

Employment History

Research Fellow

Trinity College Dublin

SUPERVISOR: PROF MARK LITTLE

2021

- Single cell RNA-sequencing lead on COVID-19 strategic partnership. Laboratory management of Trinity Kidney Health Centre (THKC). Clinical data analysis: incorporating data from clinical datasets (RedCap) with biobank datasets to stratify patients and combine with biomarker results for analysis using machine learning.

Research Associate

University of Manchester

SUPERVISOR: PROF JUDITH ALLEN.

2017-2021

- Origin, heterogeneity, proliferation and effector function of macrophages during helminth infection and type 2 immune responses. Funding: Medical Research Council/Wellcome Trust. See recent preprint for outputs.

Lecturer (teaching relief)

Trinity College Dublin

SCHOOL OF BIOCHEMISTRY AND IMMUNOLOGY

2016-2017

- Performed the teaching duties for a senior professor on sabbatical for 1 year. Duties included undergraduate practical supervision, undergraduate and MSc teaching via lectures and tutorials, setting examinations and corrections with associated administration duties.

Post-doctoral Researcher

Trinity College Dublin

SUPERVISOR: PROF KINGSTON HG MILLS.

2013-2016

- Research projects: 1. IP-protected translational project identifying and testing novel helminth-derived proteins as therapeutics for inflammatory disease. 2. Role of mast cells in the alternative activation of macrophages via IL-33. 3. Circadian regulation of autoimmune disease

Education

Special Purpose Certificate in Teaching, Learning & Assessment for Academic Practice

Trinity College Dublin

PERSPECTIVES ON TEACHING AND LEARNING IN HIGHER EDUCATION

2022

- Constitutes one third of the SP Cert

Informatics Training Scheme (Wellcome Trust TPA)

University of Manchester

PROGRAMMING AND COMPUTATIONAL APPROACHES TO BIOLOGY MODULES

2020

- Constituted 50% of taught component of MSc Bioinformatics and Systems Biology

PhD in Immunology

Trinity College Dublin

IMMUNE MODULATION BY THE HELMINTH PARASITE FASCIOLA HEPATICA

2013

- Supervisor: Kingston Mills

Funding

Building Engagements in Health Research Scheme

10K EUR, Co-PI

- Understanding mast cells and their progenitors in Telangiectasia Macularis Eruptiva Perstans (TMEP)

Internal TCD

2023

MR/V011235/1 Programme Grant

2.26 MILLION GBP, RESEARCH CO-INVESTIGATOR

- “Macrophages in type 2 immunity: unravelling susceptibility and resistance to tissue nematode infection”. I co-wrote grant and provided scientific design and preliminary data. Awarded an honorary position at UoM to facilitate ongoing collaboration after leaving Manchester

Medical Research Council

2021

Building Engagements in Health Research Scheme

10K EUR, Co-PI

- ‘Nanoparticle modulation of neutrophil and monocyte responses to ANCA’

Internal TCD

2021

FUNDING UNDER REVIEW

SFI Pathways program 2022, €425,000. - Title withheld. - Short-listed for 2nd stage, expected outcome Q2 2023.

Presentations, Awards & contributions

ORAL PRESENTATIONS (DETAILS OF 8X POSTER PRESENTATIONS AVAILABLE IN APPENDIX)

2023	AI-driven Digital Content Technology (ADAPT) Collaboration Day (Invited talk)	TU Dublin
2023	Irish society of Parasitology	Tralee, Ireland
2023	Building Engagements in Health Research	TCD, Dublin
2022	Mononuclear Phagocytes in Health and Disease (Invited talk)	CRICK, London
2022	Parasitic Helminths: New Perspectives in Biology and Infection	Hydra, Greece
2022	COVID-19 Immunology, Vaccines and Lessons for the Future (Invited talk)	TCD, Dublin
2022	Trinity Translational Medicine Institute - Conference 2022 (Invited talk)	TTMI, Dublin
2021	Cytokine and interferon society meeting	Cardiff
2019	Irish Society of Immunology (best presentation award)	RCSI, Dublin
2019	BSI Type 2 Immunology Meeting	Manchester
2019	KU Leuven, UZ Gasthuisberg Campus (Invited talk)	KU Leuven
2015	Molecular and cellular biology of helminth parasites IX	Hydra, Greece
2015	TBSI Post-Doc Research Day	TCD, Dublin
2015	1st TBSI-Weimann joint Immunology conference	Rehovot, Israel
2015	European Congress of Immunology	Vienna
2009	European Congress of Immunology	Berlin

AWARDS

2022	Wiley Top Cited Article Award - Parasite Immunology
2021	EFIS/EJI Travel/Abstract Award Winners Presenting at Cytokines 2021
2019	Best presentation from selected abstracts - Irish Society of Immunology
2015	Visiting student training scheme - Weizmann Institute of Science
2015	TBSI Post-Doc Research Day - Runner up talk prize
2014	Milstein Travel Award - International Cytokine society
2007	Valdicotrian - Biochemistry with Immunology degree
2007	Best Undergraduate Research Poster Prize - School of Biochemistry and Immunology

DISCIPLINE CONTRIBUTIONS

2023	Kidney Research UK	Grant review
2022	Irish Nephrology Society Conference	Session Chair
2022	Post-Doctoral scientist at TCD	Interview panel
2022	PhD Candidate in TCD	Continuation Viva
2021-2022	Frontiers in Immunology	Article review
2021-2022	Research Assistant at TCD	Interview panel
2021	French National Research Agency (ANR) 2021 generic call	Grant review
2021	BBSRC Discovery Fellows award	Grant review
2021	Venture capital funded Trinity Spinout – Parvalis Tx	Patent (inventor)
2018	Scientific Reports	Article review
2017-2020	Parasite Immunology	Article review

1. Finlay, C. M., Parkinson, J. E., Zhang, L., Chan, B. H. K., Ajendra, J., Chenery, A., Morrison, A., Kaymak, I., Houlder, E. L., Murtuza Baker, S., Dickie, B. R., Boon, L., Konkell, J. E., Hepworth, M. R., MacDonald, A. S., Randolph, G. J., Rückerl, D., & Allen, J. E. (2023). T helper 2 cells control monocyte to tissue-resident macrophage differentiation during nematode infection of the pleural cavity. *Immunity*, 1–18. <https://doi.org/10.1016/j.immuni.2023.02.016>
 2. McEntee, C. P., Houston, S., Finlay, C. M., Rossi, S., Liu, G., Shaw, T. N., Casulli, J., Fife, M., Smedley, C., Griffith, T. S., Pepper, M., Hussell, T., Hansbro, P. M., Schwartz, J. M., Paidassi, H., & Travis, M. A. (2023). A subset of CD4⁺ effector memory T cells limit immunity to pulmonary viral infection and prevent tissue pathology via activation of latent TGF β . *bioRxiv*, 2023.03.02.527395. <https://doi.org/10.1101/2023.03.02.527395>
 3. Han, J., Gallerand, A., Erlich, E. C., Helmink, B. A., Mair, I., Li4, X., Eckhouse2, S. R., Dimou, F. M., Shakhsher, B. A., Phelps, H., Chan, M., Schilling5, J. D., Finlay, C. M., Judith, Allen, E., Jakubick, C. V., Else, K., Onufer, E. J., Zhang, N., & Randolph, G. J. (2023). In-depth comparison of human serous cavity resident macrophages and dendritic cells to their murine counterparts. *PREPRINT (Version 1) Available at Research Square*. <https://doi.org/https://dx.doi.org/10.21203/rs.3.rs-2689141/v1>
 4. McManus, C. M., Bouchery, T., Suleiman, M., Kildemoes, A. O., Ferguson, A., Wang, T., Finlay, C. M., Chan, R., Renahan, T., Mukundan, A., Nkurunungi, G., & Bobardt, S. D. (2022). Hydra 2022: return of the interactive conference on helminth parasitology after the pandemic. *Trends in Parasitology*, 38(12), 999–1007. <https://doi.org/10.1016/j.pt.2022.09.013>
 5. Fiancette, R., Finlay, C. M., Willis, C., Bevington, S. L., Soley, J., Ng, S. T. H., Baker, S. M., Andrews, S., Hepworth, M. R., & Withers, D. R. (2021). Reciprocal transcription factor networks govern tissue-resident ILC3 subset function and identity. *Nature Immunology*, 22(10), 1245–1255. <https://doi.org/10.1038/s41590-021-01024-x>
 6. Cunningham, K. T., Finlay, C. M., & Mills, K. H. G. (2021). Helminth Imprinting of Hematopoietic Stem Cells Sustains Anti-Inflammatory Trained Innate Immunity That Attenuates Autoimmune Disease. *The Journal of Immunology*, 206(7), 1618–1630. <https://doi.org/10.4049/jimmunol.2001225>
 7. Finlay, C. M., Cunningham, K. T., Doyle, B., & Mills, K. H. G. (2020). IL-33–Stimulated Murine Mast Cells Polarize Alternatively Activated Macrophages, Which Suppress T Cells That Mediate Experimental Autoimmune Encephalomyelitis. *The Journal of Immunology*, 205(7), 1909–1919. <https://doi.org/10.4049/jimmunol.1901321>
 8. Finlay, C. M., & Allen, J. E. (2020). The immune response of inbred laboratory mice to *Litomosoides sigmodontis*: A route to discovery in myeloid cell biology. *Parasite Immunology*, 42(7), e12708. <https://doi.org/10.1111/pim.12708>
 9. Czajkowska, B. I., Finlay, C. M., Jones, G., & Brown, T. A. (2019). Diversity of a cytokinin dehydrogenase gene in wild and cultivated barley. *PLOS ONE*, 14(12), e0225899. <https://doi.org/10.1371/journal.pone.0225899>
 10. McEntee, C. P., Finlay, C. M., & Lavelle, E. C. (2019). Divergent Roles for the IL-1 Family in Gastrointestinal Homeostasis and Inflammation. *Frontiers in Immunology*, 10. <https://doi.org/10.3389/fimmu.2019.01266>
 11. Campbell, S. M., Knipper, J. A., Ruckerl, D., Finlay, C. M., Logan, N., Minutti, C. M., Mack, M., Jenkins, S. J., Taylor, M. D., & Allen, J. E. (2018). Myeloid cell recruitment versus local proliferation differentiates susceptibility from resistance to filarial infection. *eLife*, 7, e30947. <https://doi.org/10.7554/eLife.30947>
 12. Finlay, C. M., Stefanska, A. M., Coleman, M. M., Jahns, H., Cassidy, J. P., McLoughlin, R. M., & Mills, K. H. G. (2017). Secreted products of *Fasciola hepatica* inhibit the induction of T cell responses that mediate allergy. *Parasite Immunology*, 39(10), e12460. <https://doi.org/10.1111/pim.12460>
 13. Sutton, C. E., Finlay, C. M., Raverdeau, M., Early, J. O., DeCoursey, J., Zaslon, Z., O'Neill, L. A. J., Mills, K. H. G., & Curtis, A. M. (2017). Loss of the molecular clock in myeloid cells exacerbates T cell-mediated CNS autoimmune disease. *Nature Communications*, 8(1), 1923. <https://doi.org/10.1038/s41467-017-02111-0>
 14. Finlay, C. M., Stefanska, A. M., Walsh, K. P., Kelly, P. J., Boon, L., Lavelle, E. C., Walsh, P. T., & Mills, K. H. G. (2016). Helminth Products Protect against Autoimmunity via Innate Type 2 Cytokines IL-5 and IL-33, Which Promote Eosinophilia. *The Journal of Immunology*, 196(2), 703–714. <https://doi.org/10.4049/jimmunol.1501820>
 15. Bernard, N. J., Finlay, C. M., Tannahill, G. M., Cassidy, J. P., O'Neill, L. A., & Mills, K. H. (2015). A critical role for the TLR signaling adapter Mal in alveolar macrophage-mediated protection against *Bordetella pertussis*. *Mucosal Immunology*, 8(5), 982–992. <https://doi.org/10.1038/mi.2014.125>
 16. Finlay, C. M., Walsh, K. P., & Mills, K. H. G. (2014). Induction of regulatory cells by helminth parasites: exploitation for the treatment of inflammatory diseases. *Immunological Reviews*, 259(1), 206–230. <https://doi.org/10.1111/imr.12164>
 17. Coleman, M. M., Finlay, C. M., Moran, B., Keane, J., Dunne, P. J., & Mills, K. H. G. (2012). The immunoregulatory role of CD4⁺ FoxP3⁺ CD25⁺ – regulatory T cells in lungs of mice infected with *Bordetella pertussis*. *FEMS Immunology & Medical Microbiology*, 64(3), 413–424. <https://doi.org/10.1111/j.1574-695X.2011.00927.x>
 18. Walsh, K. P., Brady, M. T., Finlay, C. M., Boon, L., & Mills, K. H. G. (2009). Infection with a Helminth Parasite Attenuates Autoimmunity through TGF β -Mediated Suppression of Th17 and Th1 Responses. *The Journal of Immunology*, 183(3), 1577–1586. <https://doi.org/10.4049/jimmunol.0803803>
- Dwivedi, A., Ui Mhaonaigh, A., Carrol, M., Little, M and Finlay, C.M. low density neutrophils in SARS-Cov 2 **Under Review**
 - Commentry on my work in *Immunity*: Macrophages show up in style when Th2 lymphocytes organize their homecoming.

- Paper featured on The Immunology Podcast

Collaborations (active)

Lara Dungan, Niall Conlon

UNDERSTANDING MAST CELLS AND THEIR PROGENITORS IN TELANGIECTASIA MACULARIS ERUPTIVA PERSTANS

St James' Hospital

Padraic Fallon

TITLE WITHHELD; INFLAMMATION FOCUSED (MOUSE)

Trinity College Dublin

Arthur White

NEW STATISTICAL METHODS FOR SEMI-SUPERVISED CLUSTERING OF FLOW AND MASS CYTOMETRY DATA

Trinity College Dublin

Legend Biotech (Ireland), Tony Mc Elligott

TITLE WITHHELD

Trinity College Dublin

Judi Allen, Lili Zhang

B CELL-MACROPHAGE INTERACTIONS IN TYPE 2 IMMUNE RESPONSES

University of Manchester

Pn'g Loke

EFFECT OF GENOTYPE ON ALTERNATIVE ACTIVATION OF SEROUS CAVITY MACROPHAGES

NIH, Bethesda, MA

Niall Conlon, Katie Ridge

ROLE OF MAST CELL PROGENITORS IN CHRONIC URTICARIA

St James' Hospital

Ross MacManus

LINKING IMMUNE CELL PERTURBATIONS TO ANKYLOSING SPONDYLITIS OUTCOMES

Trinity College Dublin

Mark Travis

TITLE WITHHELD, T CELL AND INFECTION FOCUSED (MOUSE)

University of Manchester

Maria M. Munoz San Martin

TITLE WITHHELD, NEURODEGENERATION AND DEMYELINATION MODEL (MOUSE)

RCSI

Sharee Basdeo

INNATE IMMUNE TRAINING OF HUMAN MONOCYTES BY SARS-COV2 VACCINE CHAdOx1

Trinity College Dublin

Judi Allen

SEROUS CAVITY MACROPHAGE IN NEMATODE CONTROL

University of Manchester

Judi Allen, James Parkinson

THE SEROUS CAVITY PROTEOME

University of Manchester

Alvaro Diaz

ROLE OF CD40 SIGNALLING IN TISSUE RESIDENT MACOPHAGE PROLIFERATION

Uni. de la República Uruguay

Teaching & Supervision

Transcriptomics (2 hr workshop)

MSC IN IMMUNOLOGY

20 students

- Introduction to Transcriptomics and single cell technologies

2022

Datascience for Immunology (3 workshops and assessment)

MSC IN IMMUNOLOGY

20 students

- 12 hours direct teaching time. Introduction to R programming, with a focus on analysis in R markdown. Analysing and visualising immunology data in R. Single cell RNA-sequencing analysis. Student assessment in Single cell RNA-sequencing analysis. Module design and module reform via committee.

2022

R programming, data visualisation and transcriptomic analysis (3 workshops)

MSC IN IMMUNOLOGY

20 students

- Part of immunogenetics module - This included 3 dry lab sessions (in person) and assessment: student presentations of bioinformatic analysis (microarray)

2021

T cells (4 lectures)

BA(MOD) BIOCHEMISTRY WITH IMMUNOLOGY (4TH YEAR)

30 Students

- This advanced course teaches most aspect of T cell biology from development, T cell education, tolerance, activation through the immunological synapse, APC function, co-stimulation, expansion, tissue/lymph node homing, T cell subset differentiation, regulation and the concept of immune responses types. Assessment: written exam

2016-2017

Cancer immunology and immunotherapy (2 lectures)

BA(MOD) BIOCHEMISTRY WITH IMMUNOLOGY (4TH YEAR)

30 Students

- Brief history of chemotherapy, failed early immune oncology interventions, recent success, checkpoint inhibitors, combination studies, CAR-T cell, future perspectives Assessment: written exam

2016-2017

Multiple sclerosis (1 lecture)

BA(MOD) BIOCHEMISTRY WITH IMMUNOLOGY (4TH YEAR)

30 Students

- Th1 and Th17 cells in autoimmunity, animal models of disease, S1p1 inhibitors, VLA4, future targets.

2016-2017

T cell differentiation, effector function and regulation (2 lectures)

MSC IN IMMUNOLOGY

20 students

- Introductory course to T cell biology, differentiation and the cytokine control of immune responses. Assessment: written exam

2016-2017

Introduction to parasite and type 2 Immune responses (3 lectures)

20 students

MSC IN IMMUNOLOGY

2014-2017

- This is an advanced course that covers aspect of type 2 immune responses. Th2 cells, helminth infections, eosinophils, M2 macrophages, wound repair, hygiene hypothesis and allergy. Workshop style with three PBL topics. Assessment: written exam

Integratated Tutorials

3 students

BA(MOD) BIOCHEMISTRY WITH IMMUNOLOGY (3RD YEAR)

2014-2017

- Ongoing small group tutorials for 3 students each year integrated with specific modules

YOUNG SCIENTIST SUPERVISION

2023	Ba(Mod) Molecular Medicine (intercalating Medical student)	TCD
2022	Ba(Mod) Molecular Medicine (intercalating Medical student)	TCD
2021-2022	Bachelor in Medicine	TCD
2021-2022	Research Assistant	TCD
2021-2022	PhD student	TCD
2021	Ba(Mod) Molecular Medicine (intercalating Medical student)	TCD
2020-2021	Mres Infection Biology	UoM
2018-2019	Mres Infection Biology	UoM
2017-2021	PhD Student	TCD
2016	Msc Immunology	TCD
2015-2017	PhD Student	TCD
2015	Msc Immunology	TCD
2014	Msc Immunology	TCD

Additional teaching duties In 2016 I took on the academic duties for a Professor in TCD on teaching sabbatical. This included all aspects of the role, including practical supervision, assessment and marking, tutorials and administrative duties (including backboard). I have organised visits for school students at various points between 2013-2016. I have developed a 12 hour course in basic data visualisation skills for immunologists basic data science skills for immunologist (click here).

I acted as official 'external mentor' of a PhD student in Wellcome Trust in Immunomatrix in Complex Disease PhD program in Manchester. I sit on the thesis committee of 3 Trinity PhD students in School of Medicine and Statistics. My teaching philosophy is Think-Pair-Share - a method to keep students engaged by creating a mini student led discussions in class.

Outreach and organisation

Discover Research Night, Dublin Sep 2014. Marie Skłodowska-Curie-funded. I was the event organiser responsible for public engagement at Trinity Biomedical Sciences Institute, organising a team of 50 researchers in leading themed tours of scientific facilities. We were the most subscribed event of Dublin Research Night (>500 members of the public) 8 weeks' full-time.

10th International Symposium on Bordetella, Sep 2013. Logistics manager responsible for operations of the conference including registration, AV equipment and support for speakers.

Manchester Immunology Group Seminar Series, May 2017 – Sep 2018. Co-lead organiser. Handling invitations, hospitality, communications, for renowned international speakers to visit University of Manchester.

School talk, Oaklands Community College, Edenderry Co. Offaly, 2021. "The life of a scientist".

TCD Omics Core facility. I formed a working group in 2021 to address the competitive disadvantage of the lack of single cell RNA-sequencing capacity in TCD. The service was launched in 2022 on a cost-for-service basis and delivers a full pipeline from consultation, cellular isolation, library preparation, sequencing, bioinformatics and basic downstream analysis. This has now received internal support for a 0.5 % FTE research assistant and we have offered services to 5 academic and 1 industry partners.

Referees

Prof Judi Allen

PROFESSOR OF IMMUNOBIOLOGY; JUDI.ALLEN@MANCHESTER.AC.UK

University of Manchester

Lydia Becker Institute

Dr Matthew Hepworth

SIR HENRY DALE FELLOW; MATTHEW.HEPWORTH@MANCHESTER.AC.UK

University of Manchester

Lydia Becker Institute

Prof Kingston HG Mills

PROFESSOR OF EXPERIMENTAL IMMUNOLOGY; KINGSTON.MILLS@TCD.IE

Trinity College Dublin

School of Biochemistry and Immunology

Prof Cliona O'Farrelly

PROFESSOR OF COMPARATIVE IMMUNOLOGY; OFARRECL@TCD.IE

Trinity College Dublin

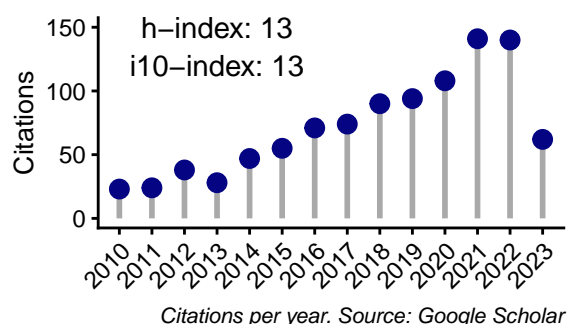
School of Biochemistry and Immunology

Appendix

Appendix on Github: **Media & commentary, Manuscripts in preparation, Short-listed Applications, Poster Presentations, Thesis Committees and Vivas, Interview panels, Training, Courses Societies and Committees, and Skills.**

Appendix

CITATIONS



Details	Number of papers
Total papers	18
As First Author	6
As primary supervisor	1
Secondary author – Major contribution (>3 months)	7
Secondary author – Minor contribution (<3 months)	4
As corresponding author	4

MANUSCRIPTS IN PREPARATION OR REVIEW, ETC (EXCLUDING PRE-PRINTS)

- Ridge, R., Finlay, C.M., O'Farrelly, C., Moran, B., Alvarado-Vazquez, A., Hallgren, J., Conlon. CD34+ CD117+ FcεR1lo cells in peripheral blood are elevated in patients with chronic spontaneous urticaria and display phenotypes which correlate with treatment response
- Dwivedi, A., Uí Mhaonaigh, A., Carrol, M., Little, M and Finlay, C.M. Characterisation of low density neutrophils in SARS-Cov 2 patients (Under review)
- Finlay, C.M. Parkinson, J.P., Chan, B.H.K. and Allen, J.E. The proteome of the pleural fluid
- O'Conluain, R., Hollingsworth, s., Little, M. and Finlay, C.M., Soluble urokinase plasminogen activator receptor is a biomarker of kidney disease in ANCA-associated vasculitis

MEDIA AND COMMENTARY

- Li, X., and Jakubczik, C. V. (2023). Macrophages show up in style when Th2 lymphocytes organize their homecoming. Immunity 56, 900–902. 10.1016/j.immuni.2023.04.007.
- Immunity paper featured on The Immunology Podcast - Episode 51
- https://www.tcd.ie/news_events/articles/2023/researchers-tackle-parasitic-worms-that-infect-millions-worldwide/
- Trinity College and University of Manchester tackle parasitic worms that infect millions, Irish Medical Times, Vol 74 No.4, April 2023

SHORT-LISTED APPLICATIONS

- Short-listed for UKRI Innovation/Rutherford Fund Skills Development Fellowship (Computational Biology), 2017.
- Short-listed for academic-industry partnership post-doctoral position, Belgium, 2019
- Short-listed as candidate from school of medicine for Science Foundation Ireland Pathways programme, 2021
- Short-listed for Lister Prize 2023

POSTER PRESENTATIONS

2019	British Society of Immunology	Liverpool
2018	Type 2 Immunity in Homeostasis and Disease	Bruges
2017	British Society of Immunology	Brighton
2016	British Society of Immunology	Liverpool
2015	Frontiers in neurology	TCD, Dublin
2014	Cytokine and interferon society meeting	Melbourne
2012	Keystone: Biology of Cytokines	Colorado
2011	Cytokine and interferon society meeting	Florence

TRAINING

2023	LAST (Ireland) course - awaiting exam outcome	LAST Ireland
2022	Illumina Sequencing (NovaSeq 6000)	Illumina
2018	Single Cell RNA-sequencing	Earlham Institute
2017	Home Office personal animal licence	Manchester
2014	Fluorescent activated cell sorting	UCD

THESIS COMMITTEES AND CONTINUATION VIVAS

2022-2023 School of Computer Science and Statistics PhD student	Ultan Doherty
2022-2023 School of Medicine PhD student	Sarah Connolly
	Mariya Al
2021-2023 School of Medicine PhD student	Hamrashdi

INTERVIEW PANELS

2022 Post-Doctoral scientist at TCD (TTMI lab)
2022 Research Assistant at TCD (Core funded)
2022 Research Assistant at TCD (our lab)
2021 Research Assistant at TCD (our lab)

[Interview panel](#)
[Interview panel](#)
[Interview panel](#)
[Interview panel](#)

COURSES

UNIVERSITY OF MANCHESTER

- Data Protection
- Introduction to High Performance Computing
- Introduction to version control using Git
- Introduction to the UNIX shell
- Programming with Python
- Data analysis using R
- Introduction to Python

TRINITY COLLEGE DUBLIN

- Biological safety workshop
- Cryogenics safety workshop
- Radiological safety workshop
- LAST animal handling course (2009)
- Data Protection and Health Research (2021)
- Project Management
- Academic Practice: Perspectives on Teaching and Learning in Higher Education (1/3 SpCert - July 2022)
- Data Protection: Data Transfer and Secondary Use of Data (2021)

SOCIETIES AND COMMITTEES

SOCIETY MEMBERSHIP

- British Society of immunology
- Irish Society of Immunology
- International Cytokine & Interferon Society
- Myeloid Network

COLLEGE COMMITTEES

- STTAR Data Committee (2021-present)
- Single Cell TCD core facility working group (Chair)
- FLOCI -Flow cytometry analysis committee (2021-Present)
- Post-Doc Representative for comparative medicine unit (CMU; animal research unit) executive committee (2016)
- Covid Strategic partnership (SFI Funded) (2021-present)
- STTAR Covid-19 M-Bio LIMS (clinical data access)

SKILLS ANNEX

I have a broad skillset that includes animal research, translational research, molecular biology, bioinformatics and clinical data analysis that make me uniquely well suited to the design and management of research projects from a multidisciplinary point of view.

Programming, Data analysis, Statistics & Visualisation: R (Fluent, 6 years), Python (Intermediate, 4 years), RMarkdown (Intermediate, 4 years) Unix/Bash (Beginner). Data analysis/visualisation in and in R. Other programs: FlowJo and Prism, Adobe Illustrator, biostatistics and its application to experimental design and interpretation. Database creation and maintenance. R Shiny Apps. high-performance computing (basic).

Bioinformatics Expert in summarising take-home messages from single cell RNA-sequencing analysis in R and python (5 years experience). Mass cytometry analysis (FLOCore, Spectre). Analysis of microarray/bulk RNA-seq datasets analysis in R (limma, DESeq2), nCounter nanosting analysis. Pathway analysis (IPA, GO), regulatory network analysis (SCENIC), trajectory inference (Slingshot, RNA velocity), clustering (hierarchical and graph-based methods), dimension reduction (UMAP, Trimap, PCA), basic experience with machine learning (non linear, random forest) and systems biology (graphs, networks, logical modelling and differential equations).

Animal models of Disease: 12 years experience in *in vivo* model design: Autoimmunity (Experimental autoimmune encephalomyelitis, DSS-colitis, Imiquimod-induced inflammation), Cancer (B16 melanoma, CT26 lung), Infection (*L. sigmodontis*, *B. pertussis*, *F. hepatica*), Allergy (Allergen airway hypersensitivity) and general *in vivo* manipulation (Cell transfers, Irradiation/bone marrow transplantation peritonitis models, circadian rhythm modulation, cytokine administration, intraplural injections).

Laboratory techniques: Expert in cell culture, cell sorting (BD Machines), high parameter (30+) flow cytometry, mass cytometry (including panel design, optimisation, storage, batch correction), tissue digestion, ELISA, lab management, inventory, ordering, health and safety.

Molecular biology NGS library preparation (Illumina) for single cell RNA-sequencing (BD Rhapsody and 10X genomics), Illumina sequencing (NovaSeq 6000) study design for NGS experiments, RNA extraction, RT-qPCR, nucleic acid QC (TapeStation, Qubit), PCR. Label free quantitative proteomics, bulk RNA-seq and ATAC-seq library preparation, enzyme assays.

Clinical research and research data handling: Ability to manage and interact with multidisciplinary teams of clinicians and scientist. Cell isolation from blood (Whole blood, granulocytes/neutrophils, PBMC), biobanking, clinical database management (RedCap). Patient stratification, data curating and multi-modal integration: data analysis of longitudinal clinical datasets with 100s of clinical fields and 10000s of patients. Writing reports in RMarkdown to be read by clinicians and scientists.