

Kevin Jay Mercurio

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PROFESSIONAL SUMMARY

Highly motivated, PhD-trained scientist with abundant experience in various research organizations. Strong research output and thorough development of communication, leadership and project management skills, leading to executive and educator roles in national and local science initiatives. Currently looking for opportunities in dynamic industry environments.

AREAS OF EXPERTISE

- **Research:** animal handling, animal drug trials, histology, genotyping, cell / tissue culture, nucleic acid isolation and purification, PCR, RT-qPCR, western blot, ELISAs, confocal microscopy, high-throughput genetics screening, RNA sequencing, strain construction.
- **Computational:** Microsoft Word / Excel / PowerPoint, Prism, R Studio, ImageJ.
- **Personal:** strong oral / written communication, leadership, project management, time management, problem solving, teamwork, adaptability.

EDUCATION

Ph.D. Microbiology, Trinity College Dublin, Dublin, Ireland **Mar 2021 — Feb 2026**
• Thesis Title: The impact of miR-21 on epithelial intercellular junctions influencing gut inflammation and barrier integrity. *Successfully defended on 12/11/2025.*

M.Sc. Biochemistry, University of Ottawa, Ottawa, ON **Sep 2017 — Apr 2020**
• Thesis Title: Identifying genes required for *Saccharomyces cerevisiae* growth in mucin.

B.Sc. Biochemistry, University of Ottawa, Ottawa, ON **Sep 2011 — Jun 2016**
• Thesis Title: Identifying novel genes involved in biofilm-specific antibiotic resistance in *Pseudomonas aeruginosa*.

RESEARCH EXPERIENCE

Graduate Researcher, Trinity College Dublin, Dublin Ireland **Mar 2021 — Feb 2026**
• Determined the role of microRNA-21 for the colonic epithelial barrier and immunological response using animal and *in vitro* inflammatory bowel disease models.
• Advanced technical skills in nucleic acid isolation and purification, PCR, RT-qPCR, western blotting, ELISAs, confocal microscopy, cell culture.
• Managed disease trials for murine genetic knockouts and inflammation models, developing skills in animal handling, drug administration, tissue isolation, genotyping histology.
• Developed strong analytical skills regarding biostatistics and study design, along with communication skills through peer-reviewed presentations in local / international conferences and focus meetings.
• Co-wrote review article on microRNAs and their impact on the gut barrier through regulation of mucus production and intercellular junctions.

Laboratory Technician, University of Ottawa, Ottawa, ON **Sep 2020 — Jan 2021**

- Performed strain construction, genomics screening, live-cell microscopy, western blotting with yeast to understand the effect of industrial toxins on cellular growth.
- Provided laboratory support through ordering and stockpiling, routine maintenance of equipment and glassware.
- Secondary author of research article on understanding the effects of undesired industrial toxins on yeast growth.

Graduate Researcher, University of Ottawa, Ottawa, ON **Sep 2017 — Apr 2020**

- Utilized genetics and microscopy tools to determine how yeast metabolize mucin as an energy source in the human gut.
- Performed high-throughput chemogenomics screening of the *Saccharomyces cerevisiae* Deletion Mutant Array and Illumina RNA-seq to identify genes of interest.
- Developed bioinformatics skills through analysis of large datasets via R Studio.
- Primary author of research article showcasing the importance of yapsin proteases for the breakdown of carbohydrate-rich mucins along the intestinal tract.

Undergraduate Researcher, University of Ottawa, Ottawa, ON **Sep 2015 — Aug 2016**

- Investigated biofilm-specific antibiotic resistance of cystic fibrosis pathogen *Pseudomonas aeruginosa* using bactericidal concentration assays on transposon-insertion mutants
- Conducted qRT-PCR analyses comparing gene expression between biofilm and planktonic cells populations.
- Constructed gene deletion mutants via plasmid manipulation and gene recombination.

Co-op Researcher, FPInnovations, Montreal, QC **Sep 2014 — Dec 2014**

- Enhanced the efficiency of enzymatic hydrolysis on softwood paper pulp material to obtain useful sugars for downstream biochemical synthesis.
- Utilized cellulases, hemicellulases and performance-enhancing additives (acids, sulphites) to break down problematic lignin biomass for product optimization.

Co-op Researcher, University of Alberta, Edmonton, AB **May 2014 — Aug 2014**

- Established microplate virulence assay protocols using different infection conditions by controlling parameters like temperature, adsorption efficiency and infection media.
- Secondary author of research article demonstrating a novel method for spectrophotometric quantification of phage virulence.

PROFESSIONAL EXPERIENCE

Podcast Creator / Host, Metaphorigins, Remote **Mar 2020 — present**

- Host personal podcast about the origins of English expressions, the science behind general communication, and techniques for science communication to the public.
- Interview graduate students and early career researchers from all backgrounds around the world about how to engage the scientific community and the public.
- Manage full workflow of podcast design; production, sound editing, video editing, social media marketing, graphic design, performance analytics, sponsorship.

- Co-Director**, Pint of Science Ireland, Dublin, Ireland **Sep 2022 — Aug 2024**
- Head project manager for the annual Pint of Science Festival in Ireland coordinating the national executive team.
 - Handled charity finances and communications with the Irish charity regulator.
 - Collaborated with Pint of Science Global and other communities across the globe.
 - Achieved Pint of Science Ireland accessibility goals through organising Gaeilge science communication events, incorporating Irish Sign Language interpretation and choosing mobility-friendly venues.
 - Analyzed festival evaluations to provide suggestions for future improvements.
 - Delivered speaker training workshops to science communicators of the annual Pint of Science Ireland festival for delivering engaging talks to the public in pubs and cafes.
- Educator**, AccessED NGO, Dublin, Ireland **Sep 2021 — Aug 2024**
- Delivered university-style tutorials to high school students in underrepresented communities in the Greater Dublin Area.
 - Lectured groups of approximately 15 students per term about microbiology, molecular biology, and microbiome research.
- CV Reviewer**, Trinity Career Services, Dublin, Ireland **May 2021 — Aug 2024**
- Provided critical feedback on CVs, LinkedIn profiles and cover letters to undergraduates.
- Trade Commissioner**, Global Affairs Canada, Ottawa, ON **Nov 2016 — Aug 2017**
- Supported the Canadian Life Sciences sector, with a focus on pharmaceuticals and biotechnology. Worked mainly with Canadian small to medium-sized enterprises to establish connections with key industry stakeholders and investors.
 - Major initiatives included providing market intelligence, aiding and expanding to new markets through consultation and funding opportunities, facilitated connections with foreign companies looking to partner, licence, invest or acquire.
 - Evaluated funding requests for trade commissioner initiatives that helped promote the sector or helped inform Canadian companies of markets with high potential.
- High School Tutor**, Independent, Ottawa, ON **Nov 2016 — Apr 2017**
- Assisted high school students primarily on the topics of chemistry and mathematics.
 - Provided clarification on fundamental concepts, reviewed homework and test questions, as well as advised on the steps to pursue further education.
- Trade Commissioner**, Global Affairs Canada, Ottawa, ON **Jun 2015 — Aug 2015**
- Co-op role developing sector assessments and strategies through research and analysis of data relevant to the domestic and international activity of the Canadian life sciences industry.
 - Gathered essential intelligence on current research operations within the fields of life sciences in Canada, such as gene therapy and immune-oncology.
 - Created presentations and drafted reports that serve as references for trade commissioners.
- Risk Profiler**, Canadian Food Inspection Agency, Ottawa, ON **Jan 2014 — Apr 2014**
- Co-op role collecting massive amounts of information as a basis for food safety reports.
 - Assessed the severity of chemical and biological hazards prevalent in common Canadian food items, such as cadmium in rice products and lead in tea leaves.

TEACHING EXPERIENCE

- **Workshop Facilitator**, Pint of Science Ireland for training speakers of the annual science communication festival on how to deliver engaging scientific talks to the public.
- **Teaching Assistant**, School of Genetics and Microbiology & School of Biology and Biomedical Sciences for undergraduate labs teaching methods like sterile technique, cell culture, strain identification, fluorescence microscopy.
- **Teaching Assistant**, Science Communication Course (EDU11001/2) for running tutorials and organising assessment projects with module coordinator.
- **Educator**, Scholars Ireland in collaboration with AccessEd and Trinity Access, bringing university-style tutorials to high school students in underrepresented communities.
- **Mentor**, URNCST Journal Mentorship Program for academic writing in gut health.
- **Supervisor**, Faculty of Medicine's Translational and Molecular Medicine Program for an undergraduate student in classic molecular biology techniques.
- **Supervisor**, Faculty of Medicine Annual DEGREE Program for an undergraduate student in chemogenomics screening.

PEER-REVIEWED PUBLICATIONS AND PRESENTATIONS

PUBLICATIONS

- **Mercurio K.**, Corr S. C. miR-21 regulates epithelial adherens junctions and intestinal wound healing processes during inflammation. *In review*.
- *Stiegeler S., ***Mercurio K.**, Iancu M. A., Corr S. C. The Impact of MicroRNAs during Inflammatory Bowel Disease: Effects on the Mucus Layer and Intercellular Junctions for Gut Permeability. *Cells*, 2021, 10, 3358. * - *equal contribution*.
- O'Callaghan A. A., Dempsey E., Iyer N., Stiegeler S., **Mercurio K.**, Corr S. C. Intestinal Metabolites Influence Macrophage Phagocytosis and Clearance of Bacterial Infection. *Frontiers in Cellular and Infection Microbiology*, 2021, 11: 622491.
- **Mercurio K.**, Singh D., Walden E., Baetz K. Global analysis of *Saccharomyces cerevisiae* growth in mucin. *G3*, 2021, 11(11), jkab294.
- Fletcher E., **Mercurio K.**, Walden E., Baetz K. A yeast chemogenomic screen identifies pathways that modulate adipic acid toxicity. *iScience*, 2021, 24(4): 102327.
- Fletcher E., Gao K., **Mercurio K.**, Ali M., Baetz K. 2019. Yeast chemogenomic screen identifies distinct metabolic pathways required to tolerate exposure to phenolic fermentation inhibitors ferulic acid, 4-hydroxybenzoic acid and coniferyl aldehyde. *Metabolic Engineering*, 2019, 52: 98-109.
- Storms Z., Teel M., **Mercurio K.**, Sauvageau D. The Virulence Index: A Metric for Quantitative Analysis of Bacteriophage Virulence. *PHAGE: Therapy, Applications, and Research*, 2019, 1: 1X. Invited article for the preview/inaugural issue.

ORAL PRESENTATIONS

- **Mercurio K.** 2025. The impact of miR-21 on epithelial intercellular junctions influencing gut inflammation and barrier integrity. Pre-viva presentation for Trinity College Dublin Department of Microbiology, Dublin, Ireland.
- **Mercurio K.**, Corr S. C. 2022. The mechanistic impact of miR-21 on gut epithelial intercellular junctions and host-microbiome interactions. Primary author of abstract, flash presentation and poster for the Microbiology Society UK's Focused Meeting, Dublin, Ireland.
- **Mercurio K.** 2022. The mechanistic impact of miR-21 on gut barrier integrity and susceptibility to intestinal inflammation. Presentation for Trinity College Dublin Department of Microbiology Postgraduate Symposium (18-month), Dublin, Ireland.

- **Mercurio K.** 2022. The mechanistic impact of miR-21 on intercellular junctions, gut microbiota and susceptibility to intestinal inflammation. Presentation for the School of Genetics and Microbiology Early Career Researcher Seminar Series, Dublin, Ireland.
- **Mercurio K.** 2021. Investigating epithelial-specific mechanisms of miR-21 influence on inflammation and the gut microbiome. Presentation for Trinity College Dublin Department of Microbiology Postgraduate Symposium (6-month), Dublin, Ireland.
- **Mercurio K.** 2019. Identifying genes required for *Saccharomyces cerevisiae* growth in mucin. Presentation for the International Conference on Yeast Genetics and Molecular Biology, Gothenburg, Sweden.
- **Mercurio K.** 2019. Identifying genes required for *Saccharomyces cerevisiae* growth in mucin. Presentation for the University of Ottawa Faculty of Medicine's Seminar Day, Ottawa, ON.
- **Mercurio K.** 2018. Wanted: *Saccharomyces cerevisiae* in the gut. Dead or alive?. Presentation for the Department of Biochemistry, Microbiology and Immunology's Trainee Seminar Series, Ottawa, ON.
- **Mercurio K.** 2016. Floxcatcher: A study on predicted biofilm-specific genes in *Pseudomonas aeruginosa* and their impact on ciprofloxacin resistance. Presentation for the University of Ottawa's Biochemistry Program Seminar Course (BCH4932), Ottawa, ON.
- **Mercurio K.** 2014. Finding the Midas Touch: Strategies to increase the value of a lignin-rich softwood high yield pulp fraction. Presentation for the FPInnovations' Co-op End-of-Term, Montreal, QC.

POSTER PRESENTATIONS

- **Mercurio K., Corr S. C.** 2024. The impact of miR-21 on epithelial intercellular junctions influencing gut inflammation and barrier repair. Primary author of abstract and poster for the European Congress of Immunology, Dublin, Ireland.
- **Mercurio K., Corr S. C.** 2024. Investigation epithelial-specific mechanisms of miR-21 influence on intestinal inflammation and IBD. Primary author of abstract and poster for the International Congress of Mucosal Immunology, Copenhagen, Denmark.
- **Mercurio K., Corr S. C.** 2022. The mechanistic impact of miR-21 on gut epithelial intercellular junctions and host-microbiome interactions. Primary author of abstract and poster for the School of Genetics and Microbiology Early Career Researcher Symposium, Dublin, Ireland.
- **Mercurio K., Corr S. C.** 2022. The mechanistic impact of miR-21 on gut epithelial intercellular junctions and host-microbiome interactions. Primary author of abstract and poster for the APC Microbiome Symposium, Cork, Ireland.
- **Mercurio K., Corr S. C.** 2022. The mechanistic impact of miR-21 on intercellular junctions and susceptibility to intestinal inflammation. Primary author of abstract and poster for the Irish Society of Immunology, Maynooth, Ireland.
- **Mercurio K., Corr S. C.** 2022. The mechanistic impact of miR-21 on intercellular junctions and susceptibility to intestinal inflammation. Primary author of abstract and poster for the Dublin University Microbiological Society's Focused Meeting, Dublin, Ireland.
- **Mercurio K., Singh D., Baetz K.** 2019. Identifying genes required for *Saccharomyces cerevisiae* growth in mucin. Primary author of abstract and poster for the Ottawa Institute of Systems Biology Conference, Cornwall, ON.
- **Mercurio K., Butcher J., Stintzi A., Baetz K.** 2018. Determining the survival ability of budding yeast in human gut-like conditions. Primary author of abstract and poster for the Department of Biochemistry, Microbiology and Immunology's Poster Day, Montebello, QC.

- **Mercurio K.**, Hall C. W., Mah T. F. 2016. Identification of a novel gene involved in *Pseudomonas aeruginosa* biofilm-specific resistance to antibiotics. Primary author of abstract and poster for the Canadian Society of Microbiologists' Conference, Toronto, ON.
- **Mercurio K.**, Mah T. F. 2016. The impact of predicted biofilm-specific genes on ciprofloxacin resistance in *Pseudomonas aeruginosa*. Primary author of abstract and poster for the University of Ottawa's Undergraduate Biochemistry Program Poster Day, Ottawa, ON.
- **Mercurio K.**, Storms Z., Sauvageau D. 2014. Determining a method of quantifying bacteriophage virulence. Primary author of abstract and poster for the University of Alberta's Research Experience Poster Symposium, Edmonton, AB.

HONOURS AND AWARDS

- Winner of the Dublin University Microbiology Society's Best Infographic (2022)
- Participant in the FameLab Ireland National Finals (2021)
- Winner of the FameLab Ireland National Video Heat (2021)
- Selected postgraduate for the Annual LERU Summer Conference (TCD, 2021)
- 3rd in audience vote in the National Canadian Science Grand Slam (2020)
- 1st place at M.Sc. Biochemistry Seminar Day (uOttawa, 2019)
- Graduate Studies Leadership Award for Student Engagement (uOttawa, 2018)
- Cum laude undergraduate academic honours (uOttawa, 2016)
- NSERC Industrial Undergraduate Student Research Award (2014)
- Entrance scholarship valued at \$8,000 (uOttawa, 2011-2012)

SOCIETIES AND AFFILIATIONS

- Member of the Society for Mucosal Immunology, US (2024-2025)
- Member of the Microbiology Society, UK & Ireland (2022-2025)
- Member of the Irish Immunological Society, Ireland (2022-2025)
- Co-Director for Pint of Science Ireland, Ireland (2022-2024)
- Chairperson for the Dublin University Microbiological Society, Ireland (2022-2023)
- Policy Coordinator for Science Slam Canada Charity, Canada (2021-2022)
- Program Coordinator for the Science to Business Network, Canada (2019-2020)
- Researcher of the Ottawa Institute of Systems Biology, Canada (2017-2020)

EXTRACURRICULAR ACTIVITIES

- Chairperson**, DU Microbiological Society, Dublin, Ireland **Sep 2022 – Aug 2023**
- Managed team of graduate students responsible for society funding and organizing academic/social events in the local microbiology community at Trinity College Dublin.
 - Planned seminars and skills development workshops for students.
 - Head coordinator for DUMS Annual Focused Meeting, a student-run hybrid conference about hot topics in microbiology involving research institutes across Ireland.

PR Officer, DU Microbiological Society, Dublin, Ireland **Oct 2021 — Aug 2022**
• Created social media campaigns for the society in promoting educational seminars, workshops and social events to students and professors in the society.

Graduate Mentor, URNCST Journal, Remote **Sep 2021 — Aug 2022**
• Supported undergraduate students' development in communication skills via academic writing for conference manuscripts.

Chapter Manager, Pint of Science Ireland, Dublin, Ireland **Sep 2021 — May 2022**
• Collaborated with volunteers across Dublin to host science communication events, bringing researchers and citizens together in informal settings.

Policy Coordinator, Science Slam Canada, Remote **Feb 2021 — Jan 2022**
• Engaged in the Governance Committee that helped advise organization re-structure, policy, and risk management, expanding national and non-profit reach.

Section Reviewer, uOttawa Journal of Medicine, Remote **Oct 2020 — Sep 2021**
• Performed first-line peer review, providing critical appraisal and comments on articles of various topics related to health.

Mentorship Coordinator, S2BN Network, Ottawa, ON **Sep 2019 — Aug 2020**
• To bridge the gap between science and industry, created the inaugural S2BN Mentorship program for STEM-based graduate students and post-doctoral fellows.
• Devised promotional materials, organised call for applications and conducted matchmaking between trainees and governmental/industry professionals.
• Produced marketing materials for the annual S2BN Academia to Industry Meeting (AIM) linking graduate students and other trainees with professionals in government, industry and NGOs.

Judge, Ottawa Regional Science Fair, Ottawa, ON **Apr 2018 — Mar 2020**
• Evaluated scientific projects in the field of biological sciences for elementary and high-school students in the Ottawa region.

Student Rep., uOttawa Faculty of Medicine, Ottawa, ON **Nov 2017 — Aug 2019**
• Supported administration in developing strategies to encourage recruitment to the Faculty of Medicine's graduate programs.
• Played a major role in the development of the Faculty's DEGREE Shadowing Program for local and provincial undergraduate students.

Student Leader, TechnoMiSE Student Association, Ottawa, ON **Oct 2017 — Aug 2019**
• Supported the communication between program coordinators and program trainees.
• Encouraged interpersonal and networking skill development through the organisation of social events between trainees.

VP Academic Affairs, BMIGSA, Ottawa, ON **May 2018 — Apr 2019**
• Represented graduate students both at the departmental and faculty level.
• Communicated academic feedback to department program directors and administration while relaying important information back to the students.
• Organised academic-related events throughout the school year such as scientific panels, skills workshops and Faculty of Medicine's Career Day.
• To address student confusion about educational and research issues, worked with the faculty administration to design orientation workshops for trainees.

Council Member, BMIGSA, Ottawa, ON **Sep 2017 — Apr 2018**

- Supported association in organising holiday events for the department.
- Devised programs that supported the graduate student experience through mentoring, seminars and skills workshop opportunities.

In-School Mentor, Big Brothers Big Sisters, Ottawa, ON **Oct 2015 — Jun 2016**

- Supervised a Little brother at his elementary school on a weekly basis.
- Designed activities to develop communication and creativity skills.
- Signified the importance of education and developing positive relationships with family, friends and members in the community.

VP Social Affairs, uOttawa Healthcare Symposium, Ottawa, ON **Sep 2015 — Apr 2016**

- Organized the largest conference at the university directed towards the challenges of a frequently changing healthcare field.
- Responsible for coordinating volunteer teams and planning event catering.
- Managed social events and activities, such as designing the “Socrates Cafe” event for discussion amongst attendees on relevant healthcare issues.

Student Educator, uOttawa Health Services, Ottawa, ON **Sep 2015 — Apr 2016**

- Member of Leave The Pack Behind: an Ontario university tobacco information program.
- Informed the student body about health-related services and events offered by the organisation through in-person interactions.
- Organized events such as CO-testing and contests providing information on the disadvantages of all types of smoking, and the benefits of quitting or reducing.

OTHER INFORMATION

Contributing Writer, Irish Green Labs, Dublin, Ireland, 2022

- Published article about how TCD postgraduates and postdoctoral fellows are advocating for green research practices: <https://irishgreenlabs.org/how-tcd-postgraduates-and-postdoctoral-fellows-are-advocating-for-green-research-practices/>.

Contributing Writer, Health Science Inquiry, Toronto, ON, 2020 — 2022

- Featured author of the short story The Climate Solution, published in the journal’s 13th Volume about climate change and health (<https://healthscienceinquiry.com/index.php/hsi/issue/view/14/15>).
- Featured author of the short story Pandemonium, published in the journal’s 12th Volume about infectious disease (<https://healthscienceinquiry.com/index.php/hsi/issue/view/13/14>).
- Featured author of the short story Blue Elephant, published in the journal’s 11th Volume about determinants of health (<https://healthscienceinquiry.com/index.php/hsi/article/view/322/301>).

Contributing Writer, Healthy Populations Journal, Halifax, NS, 2021

- Featured author of the short story The Revival, published in the journal’s 2nd Volume, Fall Edition (<https://ojs.library.dal.ca/hpj/article/view/11081>)

Contributing Writer, The University Times, Dublin, Ireland, 2021

- Published article about the SciComm Collective sponsored by Ireland’s Department of Health: <http://www.universitytimes.ie/2021/06/how-the-science-communication-collective-is-battling-misinformation/>.