

# Kevin Mercurio

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## PROFILE

Finishing Ph.D. candidate in microbiology at Trinity College Dublin. Highly motivated and innately curious, with a strong desire to share science with the world through unique and engaging methods. Abundant experience in scientific research within life sciences and academic writing, along with leadership roles in national and local science communication initiatives. Currently looking for opportunities in creative, innovative environments to further expand on leadership, communication and project management skills.

## EDUCATION

### Ph.D. Microbiology

**Mar 2021 – Feb 2026**

**Trinity College, University of Dublin**

**Dublin, Ireland**

- Thesis Title: The impact of miR-21 on epithelial intercellular junctions influencing gut inflammation and barrier integrity. *Successfully defended on 12/11/2025.*
- Supervisor: Dr. Sinéad Corr

### M.Sc. Biochemistry

**Sep 2017 – Apr 2020**

**University of Ottawa**

**Ottawa, Ontario**

- Thesis Title: Identifying genes required for *Saccharomyces cerevisiae* growth in mucin.
- Supervisor: Dr. Kristin Baetz

### Honours B.Sc. Biochemistry (with Co-op)

**Sep 2011 – Jun 2016**

**University of Ottawa**

**Ottawa, Ontario**

- Thesis Title: Identifying novel genes involved in biofilm-specific antibiotic resistance in *Pseudomonas aeruginosa*.
- Supervisor: Dr. Thien-Fah Mah

## RESEARCH EXPERIENCE

### Graduate Student

**Mar 2021 – Feb 2026**

**Trinity College, University of Dublin**

**Dublin, Ireland**

- Determined the role of microRNA-21 using *in vivo* and *in vitro* inflammatory bowel disease models to characterise impact on colonic epithelium and immunological response.
- Conducted molecular biology assays; qPCRs, immunoblotting, confocal microscopy, cell culture.
- Organised the management of disease trials for murine genetic knockout and inflammation models; animal handling, tissue isolation, genotyping.

**Laboratory Technician**  
**University of Ottawa**

**Sep 2020 – Jan 2021**  
**Ottawa, Ontario**

- Provided general technical assistance and constructed laboratory procedures as needed, routine maintenance and cleaning of equipment and glassware.
- Supported in laboratory ordering and stockpiling.
- Performed strain construction, live-cell microscopy, western blotting with yeast to understand the effect of undesired industrial toxins on cellular growth.

**Graduate Student**  
**University of Ottawa**

**Sep 2017 – Apr 2020**  
**Ottawa, Ontario**

- Utilised genetics and microscopy tools to determine how yeast metabolise mucin as an energy source, such as how fungi survive in the human gut.
- Performed high-throughput screening of the *Saccharomyces cerevisiae* Deletion Mutant Array, and RNA sequencing that led to the identification of important genes for growth in mucin.

**Undergraduate Student (Honours)**  
**University of Ottawa**

**Sep 2015 – Aug 2016**  
**Ottawa, Ontario**

- Investigated biofilm-specific antibiotic resistance in *Pseudomonas aeruginosa* found in cystic fibrosis patients using minimal bactericidal concentration assays on transposon-insertion mutants.
- Conducted qPCR analyses comparing gene expression between biofilm and planktonic cells.
- Constructed gene deletion mutants via plasmid manipulation and gene recombination.

**Co-op Researcher**  
**FPIInnovations**

**Sep 2014 – Dec 2014**  
**Montreal, Quebec**

- Enhanced the efficiency of enzymatic hydrolysis on softwood paper pulp material, as a means to obtain useful sugars for biochemical synthesis.
- Utilized cellulases, hemicellulases and performance-enhancing additives (acids, sulphites) to break down problematic lignin biomass, leading to optimal product formation.
- Developed strong communication skills through presentations to company superiors.

**Co-op Researcher**  
**University of Alberta**

**May 2014 – Aug 2014**  
**Edmonton, Alberta**

- Developed a robust method for spectrophotometric quantification of phage virulence.
- Established microplate virulence assay protocols using different infection conditions by varying parameters like temperature, adsorption efficiency and infection media.

## PEER-REVIEWED PUBLICATIONS AND PRESENTATIONS

### Publications

- **Mercurio K.**, Corr S. C. (2026). 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. (2021). The Impact of MicroRNAs during Inflammatory Bowel Disease: Effects on the Mucus Layer and Intercellular Junctions for Gut Permeability. *Cells*, 2021, 10, 3358.
- **Mercurio K.**, Singh D., Walden E., Baetz K. (2021). Global analysis of *Saccharomyces cerevisiae* growth in mucin. *G3*, 2021, 11(11), jkab294.
- O'Callaghan A. A., Dempsey E., Iyer N., Stiegeler S., **Mercurio K.**, Corr S. (2021). Intestinal Metabolites Influence Macrophage Phagocytosis and Clearance of Bacterial Infection. *Frontiers in Cellular and Infection Microbiology*, 11: 622491.
- Fletcher E., **Mercurio K.**, Walden E., Baetz K. (2021). A yeast chemogenomic screen identifies pathways that modulate adipic acid toxicity. *iScience*, 24(4): 102327.
- Storms Z., Teel M., **Mercurio K.**, Sauvageau D. (2019). The Virulence Index: A Metric for Quantitative Analysis of Bacteriophage Virulence. *PHAGE: Therapy, Applications, and Research*, 1: 1X. Invited article for the preview/inaugural issue.
- 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*, 52: 98-109.

### 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.** (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, Ontario.
- **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, Ontario.

- **Mercurio K.** (2016). *Floxcatcher: A study on predicted biofilm-specific genes in P. aeruginosa and their impact on ciprofloxacin resistance*. Presentation for the University of Ottawa's Biochemistry Program Seminar Course (BCH4932), Ottawa, Ontario.
- **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, Quebec.

## 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, poster and flash presentation for the Microbiology Society UK's Focused Meeting, 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, Ontario.
- **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, Quebec.
- **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, Ontario.
- **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, Ontario.
- **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 (UARE) Poster Symposium, Edmonton, Alberta.

## ANALYTICAL AND PROFESSIONAL TRAINING

### Student Demonstration & Mentorship

- **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.
- **Demonstrator, 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 Module (EDU11001/2)** for running tutorials and organising assessment projects with module coordinator.
- **Tutor, 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 the field of 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 chemogenomic screening.

### Technologies for Microbiome Science and Engineering (TechnoMiSE)

- Part of the Natural Science and Engineering Research Council of Canada's Collaborative Research and Training Experience Programs (NSERC-CREATE).
- Developed bioinformatics skills in workshops about the analysis of large datasets via RStudio.
- Advanced science communication skills through practicing oral presentations and networking with industry partners in microbiome science.
- Expanded on skills such as time-management, productivity, stress management and work-life balance through professional Mitacs workshops.
- To encourage trainee participation in program development, organized the TechnoMiSE Student Committee for trainee networking and project support.

## 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)
- 3<sup>rd</sup> in audience vote in the National Canadian Science Grand Slam (2020)
- 1<sup>st</sup> 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)
- Ontario Scholar Award (St. Paul Catholic High School, 2011)

## 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 (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)

## OTHER PROFESSIONAL EXPERIENCE

**Workshop Facilitator** **Sep 2024 – May 2025**  
**Pint of Science Ireland** **Dublin, Ireland**

- Devised and 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.

**PhD Tutor** **Sep 2021 – Aug 2024**  
**Scholar's Ireland** **Dublin, Ireland**

- Brought university-style tutorials to high school students in underrepresented communities.
- Lectured groups of approximately 15 students about microbiology, molecular biology, and microbiome research.

**Curriculum Vitae Reviewer** **May 2021 – Aug 2024**  
**Trinity Career Services** **Dublin, Ireland**

- Provided critical feedback on CVs, LinkedIn profiles and cover letters to undergraduates.

**Trade Commissioner** **Nov 2016 – Aug 2017**  
**Global Affairs Canada** **Ottawa, Ontario**

- Mandate was to support the Canadian biopharmaceutical and biotechnology sector.
- Contacted company administration for sector insight and support in business development.
- Designed technical reports and presentations about the Canadian impact in emerging fields such as immune-oncology and gene therapy.
- Participated in interdepartmental sector discussions and government conferences.

**Risk Profiler (Co-op)** **Jan 2014 – Apr 2014**  
**Canadian Food Inspection Agency** **Ottawa, Ontario**

- Gathered and organized 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.

## EXTRACURRICULAR ACTIVITIES

### **Co-Director**

**Sep 2022 – Aug 2024**

#### **Pint of Science Ireland**

**Dublin, Ireland**

- Oversaw the management of the Pint of Science Ireland National Team; creates agendas and records minutes for every National Team meeting.
- Handled charity finances and communicates with the charity regulator.
- Collaborated with Pint of Science Global and other communities across the globe.
- Ensured Pint of Science Ireland achieves inclusivity/accessibility goals and strives to develop communication skills for participants.
- Prepared and analyses festival evaluations to provide suggestions for future improvements.

### **Chairperson**

**Sep 2022 – Aug 2023**

#### **Dublin University Microbiological Society**

**Dublin, Ireland**

- Managed team of student volunteers responsible for society funding and managing academic/social events in the local microbiology community at Trinity College Dublin.
- Planned seminars and skills development workshops for postgraduates and undergraduates.
- Main organiser for DUMS Annual Focused Meeting, a student-run hybrid conference about hot topics in microbiology involving institutes across Ireland.

### **Public Relations Officer**

**Oct 2021 – Aug 2022**

#### **Dublin University Microbiological Society**

**Dublin, Ireland**

- Created social media campaigns for the society in promoting educational seminars, workshops and social events to undergraduates, postgraduates and professors in the society.

### **Graduate Mentor**

**Sep 2021 – Aug 2022**

#### **URNCSST Journal**

**Ottawa, Ontario**

- Supported undergraduate students' development in communication skills via academic writing for conference manuscripts.

### **Chapter Manager**

**Sep 2021 – May 2022**

#### **Pint of Science Ireland**

**Dublin, Ireland**

- Collaborated with volunteers across Dublin to host science communication events, bringing researchers and citizens together in informal settings.

### **Policy Coordinator**

**Feb 2021 – Jan 2022**

#### **Science Slam Canada**

**Ottawa, Ontario**

- As part of the restructuring of the now non-profit, responsible for devising fundamental policies of the organisation including finances, volunteer coordination and event planning.

### **Section Reviewer**

**Oct 2020 – Sep 2021**

#### **University of Ottawa's Journal of Medicine (UOJM)**

**Ottawa, Ontario**

- Performed first-line peer review, providing critical appraisal and comments on articles of various topics related to health.

**Mentorship Coordinator****Sep 2019 – Aug 2020****Science to Business Network (S2BN)****Ottawa, Ontario**

- To bridge the gap between science and industry, created the inaugural S2BN Mentorship program for STEM-based graduate students and post-doctoral fellows in the Ottawa region.
- 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****Apr 2018 – Mar 2020****Ottawa Regional Science Fair (ORSF)****Ottawa, Ontario**

- Evaluated scientific projects in the field of biological sciences for elementary and high-school students in the Ottawa region.

**Student Committee Leader****Oct 2017 – Aug 2019****TechnoMiSE Student Association****Ottawa, Ontario**

- Supported the communication between program coordinators and program trainees.
- Encouraged interpersonal and networking skill development through the organisation of social events between trainees.

**Vice-President of Academic Affairs****May 2018 – Apr 2019****Department Graduate Student Association (BMIGSA)****Ottawa, Ontario**

- 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.
- Actively engaged the student community through the organization of social events.

**In-School Mentor****Oct 2015 – Jun 2016****Big Brothers Big Sisters (BBBSO)****Ottawa, Ontario**

- 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.

**Vice-President of Social Affairs****Sep 2015 – Apr 2016****University of Ottawa Healthcare Symposium (UOHS)****Ottawa, Ontario**

- Organised 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.



## OTHER INFORMATION

### Podcast Host

**Mar 2020 – present**

### Metaphorigins

**Virtual**

- 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.

### Contributing Writer

**Dec 2022**

### Irish Green Labs

**Dublin, Ireland**

- 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/>.

### Short Story Feature

**2020-2022**

### Health Science Inquiry

**Toronto, Ontario**

- 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>)

### Short Story Feature

**Nov 2021**

### Healthy Populations Journal

**Halifax, Nova Scotia**

- 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

**May 2021**

### The University Times

**Dublin, Ireland**

- Writer on select topics regarding science initiatives that impact students at Trinity College Dublin.
- 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/>

## REFERENCES

Available upon request.