



## SPECIAL FEATURE EDITORIAL

# 10th Lorne Infection and Immunity Conference 2020

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The Lorne Infection and Immunity Conference is an annual meeting held in the beachside town of Lorne, Victoria, Australia. It is the youngest of the Lorne series of meetings held every February, including Proteins, Genome, Cancer and Proteomics, which collectively have a proud history of scientific excellence for up to 40 years. Lorne Infection and Immunity is a multidisciplinary meeting and focuses on the interactions between the immune system and infecting microbes, including bacteria, viruses, fungi or parasites. The goals of the conference are to present outstanding topical science, foster collaborations, provide opportunities for development to students, post-doctoral fellows and up-and-coming researchers; and to be a platform for immunologists and microbiologists to discuss host–pathogen interactions, innate immunity and adaptive immunity and microbiology relevant to infectious and inflammatory diseases. The conference attracts discovery researchers, clinicians and representatives from industry. We have a strong track record of ensuring equity and diversity in our program and for our delegates.

In 2020, we held our 10th anniversary conference and featured sessions on systems biology, infection and inflammation and a special session on severe acute respiratory syndrome-coronavirus 2 (SARS-CoV-2), at that time emerging as a pandemic virus. Other highlights included our plenary speaker, Professor Arturo

Zychlinsky, who spoke on neutrophil extracellular traps, which he was the first to describe, as a second function of chromatin. The plenary session also included the Hartland Oration, delivered this year by Stephen Scally (Walter and Eliza Hall Institute of Medical Research) and the highest ranked talk, delivered by Claudia Stocks (Institute for Molecular Bioscience, University of Queensland). The “Infection and immunity in translation” session, moderated by Dr Eugene Maraskovsky of CSL Limited and Professor Heidi Drummer, included discussion on Burnet Institute’s VISITECT CD4 Advanced Disease Test, which was prequalified by the World Health Organization in September 2020; and a panel discussion by translation experts: Glenn Begley (BioCurate), David Anderson (Burnet Institute) and Dena Lyras (Monash University). The meeting closed with a session on Genomics featuring a presentation by Sara Cherry (University of Pennsylvania) about using functional genomics screens in *Drosophila* to identify new therapeutic targets for infectious diseases. The breadth of topics covered is evident in each year’s program and exemplified well in this Special Feature of *Immunology & Cell Biology*, with three articles from invited speakers.

From Professor Ronchese’s laboratory, Lamiabile *et al.*<sup>1</sup> review advances in our understanding of the subsets of dendritic cells involved in T helper 2 cell responses,

which are important in parasitic infections and responses to allergens. They discuss how these immune responses are initiated, and for example, the molecules characterizing dendritic cells on exposure to allergens and the mediators they produce to signal CD4 T cells to become effector T helper 2 cells.

Saunders and McConville<sup>2</sup> complement this theme with a review of host–pathogen interactions in leishmaniasis, a parasitic infection that causes cutaneous and visceral diseases in humans. The authors discuss the metabolic requirements of *Leishmania* amastigotes and the metabolic reprogramming of M1 and M2 macrophages, which may act as permissive or nonpermissive reservoirs. These pathways are of potential importance as targets of host-directed immunometabolism therapies for leishmaniasis.

Purine metabolism is the particular focus of the review by Chua and Fraser,<sup>3</sup> who examine components of the pathway with potential to be exploited for drug development. To do this, they looked at the genes encoding purine metabolic enzymes in over 203 species across the three domains of life, finding common elements but important differences among the Archaea, Bacteria and Eukaryota.

The papers in this Special Feature are a sample of the diversity of work presented at our meeting. We are pleased that the Lorne Infection and Immunity conference both continues to grow year-on-year and remains responsive to emerging trends in our fields. We extend a warm invitation to all readers to join us at our

11th meeting, 17–19 February 2021, which will be held online in response to coronavirus disease 2019 (COVID-19). More information is available at [www.lorneinfectionimmunity.org](http://www.lorneinfectionimmunity.org).

## CONFLICT OF INTEREST

The authors declare no competing financial interests.

## AUTHOR CONTRIBUTIONS

**Rebecca E Smith:** Conceptualization; writing-original draft; writing-review & editing. **Heidi E Drummer:** Conceptualization; writing-original draft; writing-review & editing. **Paul J Hertzog:** Conceptualization; writing-original draft; writing-review & editing.

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