

Evolution and Characterization of the Immune System

Program 7 – 10 October 2024

Monday October 7th

13.00 Registration desk open

Chairs: Martin Maiers and Jim Kaufman

18.00 Welcome by Martin Maiers

18.15 [Jon van Rood Lecture](#): Ronald Bontrop. Co-evolution of MHC and KIR gene systems in primates

19.00 *Welcome dinner and drinks. Theme Italian*

Tuesday October 8th

Chairs: Loren Gragert and Lutz Walter

Topic: About the origins of the immune system

9.00 Martin Flajnik: Glimpses into the Primordial MHC

9.30 Tony de Tomaso: Evolution of a highly polymorphic histocompatibility system in a basal chordate

10.00 *Coffee/tea break*

Chairs: Martin Maiers and Tony de Tomaso

10.30 Michael Vinkler: Interspecific patterns of adaptive variation across avian immune genes

10.45 Dorothea Heimeier *et al.*: Comparative genomics of the MHC in whales and dolphins

11.00 Wieslaw Babik *et al.*: Widespread adaptive introgression of MHC genes across vertebrate hybrid zones

11.15 Tobias Lenz *et al.*: Long-term balancing selection and demographic history drive exceptional HLA gene variation in diverse African populations

11.30 Loren Gragert: HLA class II haplotype variation and alpha-beta heterodimer molecules

11.45 Onur Özer *et al.*: Spatio-temporal analysis of ancient HLA data reveals major effects of demography and admixture on immune gene diversity

12.00 *lunch*

Chairs: Jim Kaufman and Frits Koning

Topic: MHC from the bottom up

14.00 Pete Cresswell: Variations on a theme: molecular functions of MHC-I in bats

14.30 Helena Westerdahl: Songbird MHC: numerous MHC-I and IIB genes, but only a single MHC-IIA: so similar, yet so different, to that of other birds

15.00 *Coffee/tea break*

Chairs: Helena Westerdahl and Paul Norman

15.30 Jim Kaufman: Generalists and specialists: a new way to think about polymorphism of MHC and other immune molecules

16.00 Joanna Malukiewicz: Long-read approaches and advances to full diploid phased non-human primate MHC haplotypes

16.15 Giang Le *et al.*: High quality genome assembly pipeline for comparative study of complex immune regions

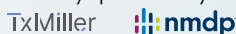
16.30 Jill Hollenbach: High-throughput, high-resolution examination of variation in the leucocyte receptor complex (LRC) in healthy cohorts of European- and African-American individuals

16.45 Martin Maiers: Pangenomic exploration of the human leucocyte receptor complex using gene feature enumeration (GFE) for variant annotation

17.00 Daniel Alvarez *et al.*: Depletion of Alzheimer's risk alleles in Cognitively healthy centenarians highlights HLA's role in longevity and healthy aging

18.00 *Dinner. Theme Oriental*

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Wednesday October 9th

Chairs: Ronald Bontrop and Peter Cresswell

Topic: Immunoglobulins, T-cell receptors and KIR

- 9.00 Gunilla Karlsson Hedestam: Population diversity of adaptive immune receptor V, D and J genes
- 9.30 Susan Ott *et al.*: Exploring the germline diversity of macaque B-cell receptor haplotypes
- 9.45 Alexej Sinner: Association between MHC genetic variability and T cell receptor repertoire diversity in humans

10.00 *Coffee/tea break*

Chairs: Gunilla Karlsson Hedestam and Martin Flajnik

- 10.30 Malcolm Sim *et al.*: Activating KIR are not weak but peptide specific
- 10.45 Noah Cline *et al.*: HLA and KIR frequencies of the Tsimane
- 11.00 Paul Norman *et al.*: An archaic KIR3DL1 lineage diversifies natural killer cell driven immunity in first nations people of Oceania
- 11.15 Jesse Bruijnesteijn *et al.*: Illuminating the genomic features driving KIR diversification
- 11.30 Nicolas Vince *et al.*: Immunogenomic exploration in a large kidney transplantation genetic cohort reveals a kidney graft failure association with recipient-KIR2DL2/donor-HLA-C2 association

12.00 *lunch*

Chairs: Jill Hollenbach and Jesse Bruijnesteijn

Topic: From LAIRs and LILRs to disease

- 14.00 Lutz Walter: Why human KIR3DX1 became non-functional
- 14.30 Frits Koning: Immunogenetics and molecular basis of Celiac Disease

15.00 *Coffee/tea break*

- 15.30 Sjoerd Creutzburg *et al.*: LILR and LAIR gene capture enables long read sequencing-based typing
- 15.45 Natasja de Groot *et al.*: LILRB1 polymorphism: a comparative analysis of humans and Old world monkey species from two continents
- 16.00 Noah Cline: Clinical case study of a missing HLA-B gene
- 16.15 Malgorzata Garstka *et al.*: Impact of F pocket polymorphism on peptide binding and stability in Type 1 diabetes associated HLA-B*39 allotypes
- 16.30 Janelle Noble *et al.*: One of these things is not like the others: HLA-C and risk for type 1 diabetes
- 16.45 Closing remarks
- 18.00 *Dinner, drinks and farewell*

Thursday October 10th

Check out and departure