

# Propositions

1. Biallelic PAX5 mutations cause a novel form of hypogammaglobulinemia by impairing B-lymphoid differentiation, maturation, and function.  
*This thesis.*
2. PAX5 deficiency causes profound hypoplasia of the substantia nigra and ventral tegmental area due to loss of GABAergic neurons, thus affecting two midbrain hubs controlling motor function and reward processing, respectively.  
*This thesis.*
3. IL-7 signaling promotes the B-lymphoid fate by enhancing expression of BACH2, EBF1, and PAX5, and expands the pool of early human B-cell progenitors.  
*This thesis.*
4. Somatic revertant variants occur frequently in the slipstream of pathogenic germline mutations.  
*This thesis.*
5. *PIK3CD* gain-of-function mutations increase the risk for neurodevelopmental deficits.  
*This thesis.*
6. A small but growing range of diseases that are life-threatening in the course of primary infection and caused by various viruses, bacteria, fungi, and parasites, in otherwise healthy children, adolescents, and adults, have been shown to be caused by monogenic IELs, mostly with incomplete penetrance.  
*Jean-Laurent Casanova and Laurent Abel - Lethal Infectious Diseases as Inborn Errors of Immunity: Toward a Synthesis of the Germ and Genetic Theories - Annual Review of Pathology: Mechanisms of Disease (2021)*
7. There is an ongoing need to combine recent genetic and genomic discoveries with functional evidence to better understand the impact of genetic variation on risk, whether it be on cellular functioning or clinical phenotype.  
*Caroline M. Dias and Christopher A. Walsh - Recent Advances in Understanding the Genetic Architecture of Autism - Annual Review of Genomics and Human Genetics (2020)*

8. The human body is a complex mosaic made up of clusters of cells with different genomes.  
*Heidi Ledford* - Nature (2019)
9. Any further delay in global action on adaptation and mitigation will miss a brief and rapidly closing window of opportunity to secure a liveable and sustainable future for all.  
*Maarten van Aalst* on climate change - Nature (2022)
10. Scientific progress on a broad front results from the free play of free intellects, working on subjects of their own choice, in the manner dictated by their curiosity for exploration of the unknown.  
*Vannevar Bush*
11. I've learned that life is one crushing defeat after another until you just wish Flanders was dead.  
*Homer J. Simpson*