

PROPOSITIONS TO THIS THESIS

1. Pancreatic juice is a promising but under-investigated source of diagnostic biomarkers for early detection of pancreatic cancer, which can be safely collected during endoscopy (*this thesis*).
2. There is a clinical need for distinguishing malignant and non-malignant solid abnormalities of the pancreas, which should be reflected in design of studies aiming to estimate diagnostic values of candidate biomarkers for detection of pancreatic cancer (*this thesis*).
3. Region-specific gene expression is critical during embryogenesis but also plays an important role in adult physiology, as exemplified by disruption of cellular spatial identity in gastrointestinal metaplasias (*this thesis*).
4. All models are wrong (*G. Box*) for Barrett's esophagus, but some are more useful than others (*this thesis*).
5. Forced expression of *HOXA13* provides esophageal cells with cancer hallmarks (*this thesis*).
6. The application of bioengineering strategies to traditional organoid culture protocols will usher in a new era of organoid development and facilitate their translation to real-life applications, fulfilling the many still unmet promises of the organoid field (*M. Hofer & M. P. Lutolf, Nature 2021*), including in field of gastrointestinal organoids.
7. Careful re-analysis of published publicly available nucleic acid sequence datasets for new purposes may increase time-, cost-, and labor-effectiveness in biomedical science.
8. While most drugs available today arose from *in vitro* screens, cell-based experiments rarely capture all complexities of cancer biology, and as the technologies mature, experiments may extend towards new types of targets, including those involving the tumour microenvironment or immune system (*Nature 2021*).
9. To be vaccinated or not to be vaccinated should not be a question in 2021 after vaccines have been saving lives for more than 200 years.
10. It is not birth, marriage, or death, but gastrulation which is truly the most important time in your life (*Lewis Wolpert*).
11. Women belong in all places where decisions are being made. It shouldn't be that women are the exception (*Ruth Bader Ginsburg*).