

FOCIS 2026 FOCISed Systems Immunology Course

Pre-Course Reading Materials

- I. Zhu R., Dann E. *et al.* Genome-scale perturb-seq in primary human CD4+ T cells maps context-specific regulators of T cell programs and human immune traits. bioRxiv 2025.12.23.696273. <https://doi.org/10.64898/2025.12.23.696273>
- II. Nasser, J., Bergman, D.T., Fulco, C.P. *et al.* Genome-wide enhancer maps link risk variants to disease genes. *Nature* **593**, 238–243 (2021). <https://doi.org/10.1038/s41586-021-03446-x>
- III. Nasser, J., Bergman, D.T., Fulco, C.P. *et al.* Genome-wide enhancer maps link risk variants to disease genes. *Nature* 593, 238–243 (2021). <https://doi.org/10.1038/s41586-021-03446-x>
- IV. Genetics of rheumatoid arthritis contributes to biology and drug discovery <https://www.ncbi.nlm.nih.gov/pubmed/24390342>
- V. Single-cell RNA sequencing of human tissue supports successful drug targets [Single-cell RNA sequencing of human tissue supports successful drug targets | medRxiv](#)
- VI. [AI-powered therapeutic target discovery](#)
- VII. [Single-cell technologies: From research to application: The Innovation](#)
- VIII. [Target identification and assessment in the era of AI | Nature Reviews Drug Discovery](#)
- IX. Nature 2018 Feb 22;554(7693):544-548. doi: 10.1038/nature25501. Epub 2018 Feb 14. TGF β attenuates tumour response to PD-L1 blockade by contributing to exclusion of T cells. <https://pubmed.ncbi.nlm.nih.gov/29443960/>
- X. Immunity 2023 Oct 10;56(10):2188-2205. doi: 10.1016/j.immuni.2023.09.011. The cancer-immunity cycle: Indication, genotype, and immunotype. <https://pubmed.ncbi.nlm.nih.gov/37820582/>

- XI. [Integrating genetic regulation and single-cell expression with GWAS prioritizes causal genes and cell types for glaucoma](#)
- XII. [Optional] **Vaswani A**, et al. (2017) Attention is all you need. *Advances in Neural Information Processing Systems* 30 ([link](#))
- XIII. **Jumper J**, et al. (2021) Highly accurate protein structure prediction with AlphaFold. *Nature* 596:583–589 ([link](#))
- XIV. [Optional] **Watson JL**, et al. (2023) De novo design of protein structure and function with RFdiffusion. *Nature* 620(7976):1089–1100 ([link](#))
- XV. [Optional] **Saltz J**, et al. (2018) Spatial organization and molecular correlation of tumor-infiltrating lymphocytes using deep learning on pathology images. *Cell Reports* 23(1):181–193.e7 ([link](#))
- XVI. **Cui H**, et al. (2023) scGPT: toward building a foundation model for single-cell multi-omics using generative AI. *Nature Methods* 21(8):1470–1480 ([link](#))
- XVII. **Yao S**, et al. (2022) ReAct: Synergizing reasoning and acting in language models. *arXiv preprint arXiv:2210.03629* ([link](#))
- XVIII. [Optional] **Boiko DA**, MacKnight R, Kline B, Gomes G (2023) Autonomous chemical research with large language models. *Nature* 624:570–578 ([link](#))