

Identifying and Classifying Cell Types from Single-cell Transcriptomics

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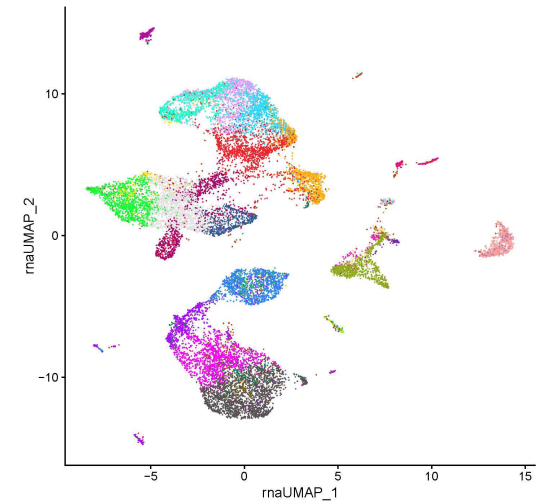
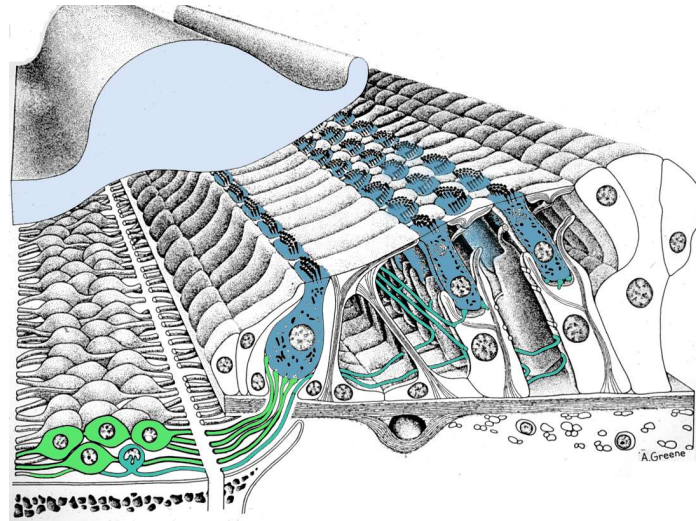
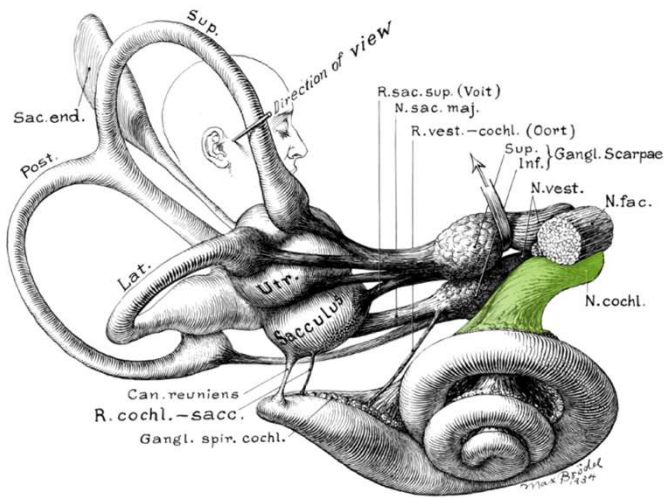
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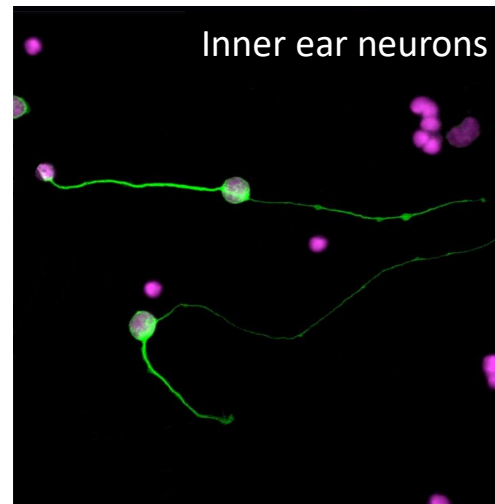
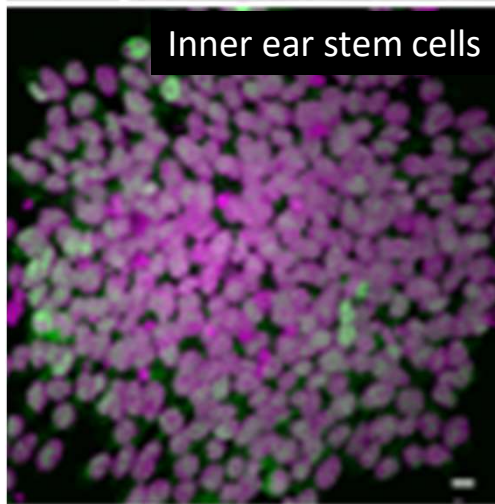
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Identifying and Classifying Cell Types from Single-Cell Transcriptomics



- Identifying cell types by transcriptome (set of RNA molecules in a cell)
- Classify and group cells based on their transcriptomes
- Each cluster of cells is considered a cell type

Identifying and Classifying Cell Types from Single-Cell Transcriptomics



	Cell1	Cell2	...	CellN
Gene1	3	2	.	13
Gene2	2	3	.	1
Gene3	1	14	.	18
...
...
...
GeneM	25	0	.	0

- **Cell States:** Defining transitional states or novel cell states from damage or genetic mutations
- **Species/Source Differences:** Fundamental variations in cell biology, gene regulation, and aging mechanisms
- **Technical Issues:** Few cells, low sequencing depth, lack of reference atlas
- **Biased Classification Methods:** Based on the expression of several known genes