Manan Chopra
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EDUCATION

UC San Diego | La Jolla, CA **Sept. 2019 - June 2023**
Major: Biology w/ Specialization in Bioinformatics (B.S.) | **Major GPA:** 3.97
Relevant coursework: Bioinformatic Algorithms, Biological Databases, Adv. Bioinformatics Lab, Genomic Technologies, Molecular Sequence Analysis, Probability & Statistics for Bioinformatics, Genetics, Organic Chemistry I/II,Linear Algebra/MATLAB, Calculus I/II/III, Adv. Data Structures & Algorithms

PUBLICATIONS/PRESENTATIONS

- **(PUBLICATION)** *Human Retinal Ganglion Cell Neurons Generated by Synchronous BMP inhibition and Transcription Factor Mediated Reprogramming*, npj Regenerative Medicine [IN PRESS]
- **(PUBLICATION)** *Restoring vision and rebuilding the retina by Müller glial cell reprogramming*, Stem Cell Research, Dec 2022 (https://www.sciencedirect.com/science/article/pii/S1873506122003555?via%3Dihub)
- **(PUBLICATION)** *Chromatin Accessibility and Transcriptional Differences in Human Stem Cell-Derived Early-Stage Retinal Organoids*, MDPI Cells, Nov 2022 (https://www.mdpi.com/2073-4409/11/21/3412)
- **(CONFERENCE POSTER)** *Early Transcriptional Dynamics of Retinal Ganglion Cells Generated by Direct Conversion*, ARVO Research Conference Poster, April 2023
- **(CONFERENCE PRESENTATION)** *Using Pathway Analysis to Uncover Biological Processes in Early Stage Induced Retinal Ganglion Cells*, UC San Diego Undergraduate Research Conference Presentation, April 2023 (https://github.com/recursivelymanan/UCSanDiego_URC_presentation_23)
- **(CONFERENCE PRESENTATION)** *Induction of Retinal Ganglion Cells through Transcription Factor Mediated Reprogramming*, UC San Diego Undergraduate Research Conference Presentation, Aug 2022 (https://github.com/recursivelymanan/UCSanDiego_URC_presentation_22/blob/main/urc22_slides.pdf)

LAB/RESEARCH EXPERIENCE

Wahlin Lab | *Undergraduate Research Assistant* | La Jolla, California **June 2021 - Present**

- Developed and implemented bioinformatic workflows in Python and R for the analysis of large Next Generation Sequencing datasets (both bulk and single-cell), resulting in the generation of figures for multiple publications
- Utilized various bioinformatics tools and software, including FastQC, HISAT2, STAR, featureCounts, DESeq2, scanpy, Cellranger, GSEA, HOMER
- Completed analysis workflow by visualizing data to highlight significant trends using many graphing libraries like matplotlib, seaborn, ggplot2, and plotly
- Performed both wet lab (purification of target RNA from hundreds of samples, library preparation for NGS) and dry lab (bioinformatic analysis and visualization) portions of experiments
- Collaborated with cross-disciplinary team to interpret bioinformatic results in a biological context and contribute to research publications by providing data analysis and interpretation and drafting sections of the manuscript
- Created and maintained WahlinLab GitHub repository with the goal of making code accessible to scientists with varying levels of experience in computational biology (https://github.com/WahlinLab)
- Designed original curriculum for education lab meetings with the purpose of teaching my peers how to effectively utilize Jupyter Notebooks and Python to perform data analysis for various ongoing projects

Senior Honors Thesis | *UC San Diego Department of Biological Sciences* | La Jolla, California **Sept 2022 - Present**

- *Exploration of Lineage-Traced Muller Glia Conversion to Retinal Ganglion Cells with Python and Jupyter Notebooks*

BISP 193 | Biology Education Research **June 2021 - Aug 2021**

- Performed research regarding the educational methods used to instruct students in the field of Bioinformatics, and the effectiveness of such practices, under the supervision of Dr. Katherine Petrie