Virginia Tech

Solving Problems with Data Science at Virginia Tech
Summer REU 2023

Data Sciences Project:

Using an automated pipeline to count centrosomes (Cimini Lab)

Project Description:

The centrosome is a key cellular organelle that organizes a cell's cytoskeleton and its division apparatus. Many cancer cells have been reported to possess supernumerary centrosomes, which can lead to abnormal cell proliferation. The Cimini lab is studying how certain conditions found in the tumor microenvironment may influence the retention or acquisition of extra centrosomes. Students will use an automated pipeline to perform downstream analysis of microscopy images and determine the number of centrosomes in individual cells.

Expected Qualifications of Students:

Students are expected to have basic cell biology knowledge and moderate computer skills.

Faculty Bio:

Dr. Daniela Cimini is a professor in the Department of Biological Sciences at Virginia Tech. She received her B.S. and Ph.D. from "La Sapienza" University of Rome and did her postdoctoral training at the University of North Carolina at Chapel Hill.

Website: https://www.faculty.biol.vt.edu/cimini/

DNA
Centrosomes
Kinetochores