End-of-term reflection Isabella Hollingsworth BIO293

One key concept from my Cell Biology class that connected to my other coursework and aligned with my interest in biology, particularly in the field of rheumatology, was the study of cell signaling pathways, with emphasis on those that regulate immune responses in autoimmune diseases. The detailed exploration of how cytokines and receptors on immune cells mediate inflammation cycles helped me make clear connections to my immunology coursework and work in rheumatology, where we discuss how dysregulated immune activation leads to conditions like rheumatoid arthritis (RA). For example, the role of TNF- α in driving chronic inflammation is fundamental to understanding both the pathophysiology of autoimmune diseases and how biologic therapies like TNF inhibitors work. Additionally, this knowledge complemented my chemistry coursework by linking cellular signaling cascades to molecular processes, such as protein phosphorylation and second messenger systems, that are essential in regulating immune cell function. This concept helped me grow as a student by improving my ability to integrate knowledge across multiple subjects. Studying these mechanisms not only improved my understanding of disease mechanisms but also helped me appreciate the molecular targets of therapeutic interventions in rheumatology, making me more confident in both my academic work and future clinical roles.