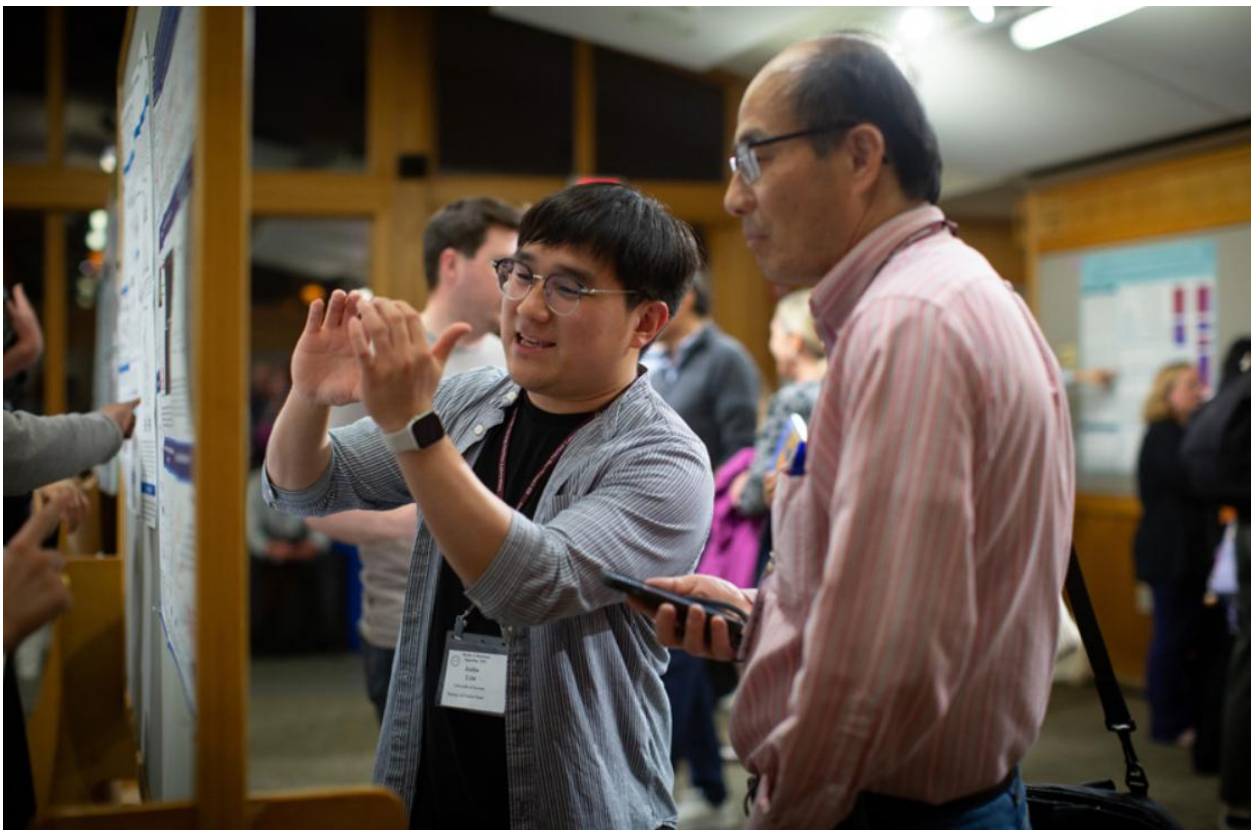

Thanks to the generous support of the Carter Travel Award, I had the invaluable opportunity to attend the 2025 *Cold Spring Harbor Laboratory Conference on Mechanisms of Metabolic Signaling*, held from May 13th to 17th in Cold Spring Harbor, NY. As a graduate student working on nutrient signaling, this conference significantly broadened my scientific perspective and provided numerous opportunities for meaningful engagement with leaders in the field.

On the first day, I was particularly inspired by the keynote talks from Prof. Jared Rutter and Prof. Jim Galligan, who discussed how cells make decisions based on metabolic cues and the various strategies used to identify the molecular players involved in nutrient sensing. These presentations provided a perfect foundation for the rest of the conference, particularly given their relevance to my own work. Among the keynote talks, I especially appreciated that many presenters shared cutting-edge, unpublished research findings. Being exposed to the forefront of scientific discovery in real time was both exciting and intellectually stimulating.

That same evening, I had the privilege of presenting my research poster on how TORC1 senses nutrient availability, particularly under histidine-deprived conditions, with a focus on a novel negative regulator, Vsb1, which I recently identified. I invited Prof. Rutter to visit my poster, and we had an extended and insightful discussion about experimental strategies to investigate the molecular mechanisms underlying Vsb1's role in nutrient sensing. Given his lab's expertise in amino acid sensing and development of novel assays to identify metabolite-binding proteins, our conversation was both intellectually stimulating and affirming. It was a truly rewarding experience to share my work directly with a highly respected figure in the field.

Throughout the poster session, I had the opportunity to engage with a wide range of attendees, including graduate students, postdocs, faculty, and industry professionals—many of whom were both familiar and unfamiliar with the specific metabolic signaling pathways I study. These interactions not only provided helpful feedback but also encouraged reciprocal visits to their posters in the following days, which enriched my understanding of the diverse approaches in the field. One particularly notable interaction occurred with a researcher from industry who was also working on Vsb1 but from a different perspective. This conversation was a valuable opportunity to exchange ideas and understand how my work might align with industrial interests, broadening my view of potential career paths.

Although I was the only representative from my lab at this meeting, I had numerous opportunities to continue discussions during lunch and dinner sessions, which led to meaningful connections and professional insights. From the second day onward, the conference emphasized technologies that can be used to dissect metabolic mechanisms, particularly the expanding field of biosensors. Because a biosensor-focused meeting had taken place immediately prior to this conference, many leading researchers in the area were in attendance. I benefited greatly from their talks and informal discussions during coffee breaks and meals. These exchanges deepened my understanding of how biosensor technologies might be integrated into my future research.

The conference program was organized into several thematic sessions—such as growth and proliferation, metabolism in diverse cell types, organellar metabolism, and metabolic crosstalk with the genome and epigenome. These sessions reminded me of the incredible breadth and depth of the field, and they highlighted the importance of interdisciplinary collaboration to advance metabolic research. I came away with a strong sense of the potential for synergistic projects that connect my work with adjacent areas in metabolism.

Beyond the scientific sessions, attending the conference at Cold Spring Harbor Laboratory, a world-renowned institute with a legacy of eight Nobel laureates, was an inspiring experience. I had the chance to tour one of the labs, see the historical Nobel-winning experiment sites and buildings, and learn more about the unique research environment at CSHL. During a solo walk along the shore, I happened to strike up a conversation with someone who noticed my conference name tag—he turned out to be a recently hired postdoc at CSHL. Our spontaneous conversation turned into a thoughtful discussion about career planning, particularly the pros and cons of postdoctoral positions in academia versus industry. Hearing his perspective was unexpectedly insightful and timely.

Overall, attending this conference significantly broadened my scientific understanding of metabolic signaling, especially nutrient sensing pathway and introduced me to cutting-edge technologies and methods that I hope to incorporate into future work. The experience also provided valuable career insights and professional connections that will undoubtedly shape the next stages of my academic journey.