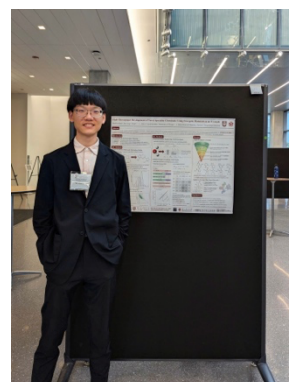
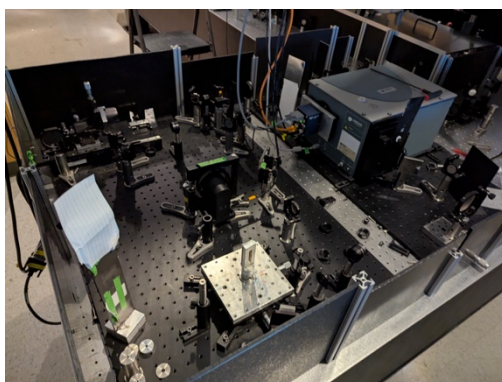


Wei-Kai Shao | Final Report for the UCTS Scholarship

I am deeply honored to have received the UCTS Scholarship, which enabled me to conduct research at the University of Chicago under the guidance of Prof. Greg Engel. In his laboratory, I gained extensive knowledge of ultrafast spectroscopy. Specifically, I learned the principles of instrument design, optical path optimization, data analysis scripting, and systematic noise elimination for complex spectroscopic measurements.



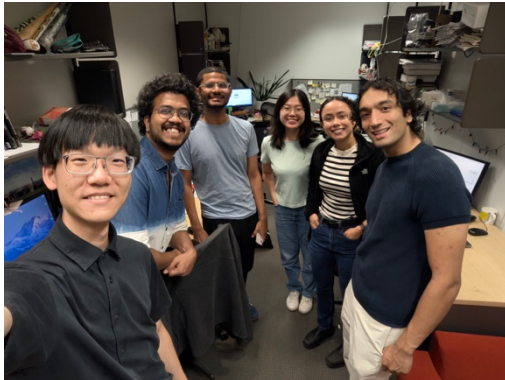
The Ph.D. Rotator Experience

While many peers entered labs with clear projects, Prof. Engel's approach allowed me to “*experience the life of a Ph.D. student*,” focusing on independent research development. This process involved: observing senior lab members' experiments, thoroughly questioning them on component functionality and principles, deep-diving into key literature and published works, and systematically acquiring technical knowledge through the lab's summer tutorial.

Initially, the combination of a new research domain and limited English proficiency made me feel significantly challenged. I often struggled to grasp complex explanations and hesitated to ask basic questions. However, I quickly embraced the core principle of American lab culture: “*never hesitate to ask*”. This atmosphere of open inquiry encouraged teaching and collaborative problem-solving.

My role became less like a “summer researcher” and more akin to a first-year Ph.D. “rotator.” I maximized my learning by observing and engaging with other outstanding rotators. Crucially, I discovered that communication intent outweighs language proficiency; native speakers readily clarify technical terms, fostering mutual understanding. While my vocabulary did not dramatically increase, I

developed substantially greater confidence in speaking and mastered the ability to rephrase thoughts when encountering unfamiliar words.



Seeking Future Direction

Beyond the research, Prof. Engel assigned a critical mission: to conduct "coffee chats" with lab members and external PhDs, asking three key questions: *"Why pursue a Ph.D.? Why UChicago? Why this lab?"* This exercise served two purposes: it forced me to initiate conversations with a diverse group of international students bravely and, most importantly, provided essential clarity for my future career direction.

Given my background of published papers and industry scholarships since my undergraduate studies, I had been weighing a career in industrial R&D against pursuing a Ph.D. Recognizing that graduation was approaching, I felt a pressing need to finalize this decision. My conversations with nearly 40 individuals offered a substantially broader perspective on career paths and the rationale for doctoral study. I am deeply thankful for the inspiration gained, which led to my firm decision to focus solely on applying to Ph.D. programs this year upon returning to Taiwan.

Leadership and Immersion in Chicago

I would like to express my sincere gratitude to Prof. Chin Cheng for the opportunity to serve as the leader of the entire UCTS program cohort. This role required me to plan and organize various activities for all participants. I personally took the initiative to explore 200+ places in Chicago during my exchange. Furthermore, I managed to host 100+ events in total, including 20+ major events that saw participation from over half of the students in the program. This experience was invaluable for developing my leadership, organizational, and interpersonal skills.