

Last summer, I joined the UChicago-Taiwan student exchange program and spent three and a half months at the University of Chicago doing research. It was a wonderful journey, and I will treasure this experience forever.

The program is conducted by Professor Chin Cheng, a Taiwanese physics professor at the University of Chicago. It is a three-month exchange fellowship designed for students majoring primarily in physics. We came to Chicago to immerse ourselves in the culture, atmosphere, and, most importantly, the academic environment of one of the world's leading institutions for higher education and research. Throughout my stay, I engaged deeply in research and academic discussions, which expanded my perspective on how cutting-edge research is carried out.

During the program, my project focused on investigating the Callan-Rubakov effect, a fascinating phenomenon in particle physics. The Callan-Rubakov effect describes a "missing" final state problem when a multi-flavored fermion scatters with a magnetic monopole. To work on this project, I collaborated with Professor Liantao Wang, a particle physicist who excels in both theoretical and experimental physics, and Professor Clay Cordova, a renowned formal theorist specializing in the symmetries of quantum field theories. Together, we aimed to explore whether there are any practical measurements of this effect that could be implemented in particle colliders or observed through astrophysical telescopes.

The experience of working with these esteemed professors was invaluable. Through this research project, I delved into advanced topics in theoretical physics, including conformal field theory and generalized symmetries, which broadened my understanding of the fundamental concepts in physics. I also gained insight into phenomenology, which helped me bridge the gap between abstract theoretical frameworks and real-world experimental observations. This dual approach enhanced my ability to tackle complex problems from multiple angles and deepened my appreciation for the interdisciplinary nature of modern physics.

Beyond the technical knowledge I acquired, this program provided me with an opportunity to experience life in a completely different environment from where I grew up. Chicago is a vibrant and diverse city known for its rich cultural heritage, stunning architecture, and distinctive neighborhoods. During my stay, I made it a point to explore the city on weekends and visit some of its most iconic landmarks.

The first place I visited was the Skydeck in the Willis Tower. The Willis Tower, a 110-story skyscraper, once held the title of the world's tallest building for 25 years. The Skydeck is a 360-degree observation deck located on the 103rd floor, offering breathtaking views of Chicago and its surroundings. Standing on the glass ledge, I felt like I was floating above the city. I could see tiny cars and trains crisscrossing the urban landscape far below. The calmness of the view contrasted sharply with the intensity of the height, creating a surreal, dream-like sensation. It was an exhilarating experience that made me feel connected to the pulse of the city in a unique way.

Next, I visited the Art Institute of Chicago, which quickly became one of my favorite places. The museum is known for its impressive collection of art, including post-impressionist masterpieces such as *A Sunday on La Grande Jatte* by Georges Seurat, *American Gothic* by Grant Wood, and Vincent van Gogh's self-portrait. The building itself is an architectural marvel. The harmonious blend of classical exterior design with modern interior spaces creates an atmosphere that is both grand and welcoming. I spent hours wandering through the galleries, admiring the works of art, and losing myself in the intricate details and vibrant colors of the paintings.

Another highlight of my stay was visiting the Green Mill Cocktail Lounge, an iconic jazz bar with a history dating back to the early 20th century. The Green Mill is a Chicago institution known for its lively atmosphere and top-notch live jazz performances. I visited the club twice, each time

experiencing a different band. One evening featured a traditional jazz ensemble led by a talented saxophonist, while the other showcased a fusion jazz group with three percussionists playing in perfect harmony. I was captivated not only by the music but also by the interaction between the performers and the audience. It felt as if everyone in the bar, from the musicians to the patrons, was part of a collective celebration of sound and rhythm. The Green Mill's timeless charm and authentic jazz scene made it a place I looked forward to revisiting whenever I had the chance.

Beyond sightseeing and cultural exploration, the most impactful aspect of the program was the people I met. The program brought me into contact with a diverse group of individuals, each with their unique perspectives and experiences. Apart from the professors and PhD students in my department, Professor Chin Cheng invited us to special banquets and encouraged us to engage with people from other fields and communities.

One particularly memorable event was a gathering at the Taipei Economic and Cultural Office in Chicago. There, I met the program's supporters and other members of the Taiwanese community. They shared invaluable advice and personal stories that helped me navigate the challenges of adapting to a new environment during the first few weeks. The sense of camaraderie and support I felt during this meeting was heartwarming and made me appreciate the importance of cultural and academic exchange programs in fostering connections and mutual understanding.

Another memorable event was a summer barbecue hosted by the atomic, molecular, and optical physics department. I had the opportunity to converse with students and researchers who specialized in experimental physics, learning about their work in atom trapping and equipment construction. While I am not deeply familiar with the technical details of their research, I was fascinated by their passion and dedication. These conversations gave me a new appreciation for experimental techniques and expanded my knowledge beyond my primary area of study.

In conclusion, if anyone were to ask me about the UChicago-Taiwan student exchange program, I would wholeheartedly recommend applying for this fellowship. It provided me with countless unique experiences, broadened my academic and personal horizons, and encouraged me to try new things I had never even considered before. The three months I spent in Chicago were both fulfilling and enjoyable, and I have already started to miss everything about my time there. The knowledge, skills, and friendships I gained will remain with me as I continue my academic and professional journey, and I will always cherish the memories of my wonderful summer at the University of Chicago.



