

## National Yang Ming Chiao Tung University Visits Two Universities in the U.S. to Initiate Medical Research Collaboration

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In late September, a delegation of medical and engineering professors from National Yang Ming Chiao Tung University (NYCU) traveled to the U.S. to visit the University of Illinois Urbana-Champaign (UIUC) and the University of Missouri (MU). The purpose of this trip was to establish research collaborations with these two universities and thereby develop NYCU's strengths in medicine and engineering.

NYCU President Chi-Hung Lin first led the delegation to visit UIUC and sign a letter of intent of education and research collaboration with Timothy L. Killeen, President of the University of Illinois (UI) System. The signing of the letter of intent was witnessed by senior executives and deans of several colleges of the UI system. In addition, the NYCU delegation met with UIUC Chancellor Robert Jones and James C. Leonard, President and CEO of the Carle Foundation during the visit. NYCU and UIUC also appointed contact persons to facilitate future collaboration.



The UI System has three campuses in Champaign, Chicago, and Springfield, with the flagship UIUC ranking among the top research universities in the U.S. In 2015, UIUC, in partnership with the Carle Foundation Hospital, established the Carle Illinois College of Medicine, which is the first technology-oriented medical school in the U.S. Both medical and engineering faculty are jointly engaged in medical teaching and training. As a result, students acquire knowledge and skills from multiple perspectives.

The collaboration between NYCU and UIUC will benefit students at both universities. UIUC medical students will now be able to intern in NYCU's smart hospital and benefit from NYCU's strengths in digital healthcare, brain science, public health, and semiconductor research. Moreover, NYCU's third- and fourth-year medical students can enroll in a six-week intensive course, the so-called "Discovery Program," and participate in research and internships at UIUC. The collaboration with UIUC's Carle Illinois College of Medicine will also enable NYCU to further develop its Physician-Engineer Program. Student and faculty exchanges between the two universities will enhance the international competitiveness of the engineering-based medical professionals trained through this program.

When it comes to research, the two universities will first work together on three projects that focus on cardiovascular disease, cancer, and dementia. NYCU and UIUC are in the process of creating research teams for these projects. More generally, the research collaboration will provide an opportunity for UIUC's strengths in engineering and medicine and NYCU's strengths in information and communications technology and biomedical science and to complement one another.

The NYCU delegation then traveled to the University of Missouri (MU). Professor Tzyh-Chang Hwang, who is affiliated with both NYCU and MU, arranged a visit to MU's Dalton Cardiovascular Research Center. The Center has a long history of cooperation with NYCU's College of Medicine. As a result, the two institutions have cultivated many outstanding physician-scientist talents. The purpose of this meeting was to strengthen and expand this collaboration. During the meeting, faculty from both universities introduced their departments' current status and research directions and explored the possibility of student exchanges and dual-degree programs.

The NYCU team also visited MU's Institute for Data Science and Informatics, College of Engineering, Department of Medical Pharmacology and Physiology, and Department of Biochemistry. According to Prof. Chi-Ren Shyu, Director of MU's Institute for Data Science and Informatics, MU is highly interested in a cross-university collaboration with NYCU and hopes to attract NYCU's medical students to its Ph.D. programs. NYCU's Department of Medicine and Institute of Pharmacology reached an agreement with MU's Department of Medical Pharmacology and Physiology and Department of Biochemistry to expand the cooperation platform for short-term exchange of students and postdoctoral fellows, faculty exchanges and lectures, and joint supervision of doctoral research. The NYCU delegation also presented a plaque of appreciation to MU's Dalton Cardiovascular Research Center and its Institute of Medical Pharmacology and Physiology in recognition of the training they provide for M.D.s.



Prof. Min Su, Director of MU's Electron Microscopy core laboratory, introduced the NYCU delegates to the NextGen Precision Health building, which houses the latest Thermo Scientific Krios G4 Cryo-TEM. This microscope has a resolution up to 0.2 nm. Moreover, it is entirely operational online and can acquire images through a network connection. In addition, Prof. Su also introduced the NYCU delegates to MU's functional electron microscopes, image processing centers, and comprehensive biomedical research facilities.

According to Haydn Chen, Professor and Chief Strategy Officer of the President's office at NYCU, although NYCU has nurtured medical specialists in Taiwan for years, it must keep pace with emerging sciences and technologies that are applicable to healthcare. Therefore, higher education policymakers should think of innovative ways to equip medical students and physicians with forefront knowledge and competence to cope with future difficulties and challenges in medicine.

