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PARTNERSHIPS FOR THE GOALS

Research

From 2011 to 2020, NYCU published 11623 international articles, 3505 (30%) of which are associated with at least 1 SDG.

Disaster Prevention and Water Environment Research Platform

The "Disaster Prevention and Water Environment Research Center" established the "Disaster Prevention and Water Environment Research Platform". The Center also trains professional talent, helps the government conduct disaster prevention policy planning and execution, and conducts post-disaster investigation and subsequent reconstruction work. The Center's research covers fields like soil and water, water environment technology, automatic disaster prevention monitoring information systems, and industry disaster prevention. For years, the Center has supported the research requirements of relevant government agencies (e.g. the "MOEA's Water Resources Agency," Ministry of the Interior, Ministry of Transportation and Communications, Taiwan Water Corporation, Environmental Protection Administration, Council of Agriculture, etc.) and strived to execute research plans, thus committing to implementing the application and social service aspect of the research. Also, the Center established international collaboration with the "Dutch research institute Deltares." The collaboration involves conducting FBG sensor experiments in the Netherlands as well as an international construction project on "Singapore's Julong Island." The Center integrated the flow simulation model it developed with "Deltares' Flood Early Warning System" (FEWS). Going forward, this system can be used in countries with similar rainfall patterns and topography to provide urban flood warnings as well as early warnings of embankment damage and slope collapse.

One Health and Epidemic Prevention Research

NYCU is the first university in Taiwan to promote the concept of "One Health", leading six universities in Taiwan to establish the Taiwan One Health University Network (TAOHUN). At the same time, the University also joined the Southeast Asia One Health University Network (SEAOHUN), helping the government improve Taiwan's ability to handle the threat of public health incidents and forming close connections with Taiwan's diplomatic allies in Southeast Asia on epidemic prevention strategies. NYCU established the "Research Center for Epidemic Prevention" to understand the pathology of COVID-19, develop cellular immunotherapy, and explore the impact of the COVID-19 pandemic on human culture and society. The Center also established an international epidemic prevention network, organizing multiple open forums in 2020 that invited scholars from around the world to discuss COVID-19 prevention strategies from medical and legal perspectives. For example, in "the Joint International Tropical Medicine Meeting" (JITMM), the Center hosted an academic forum entitled "Tropical Disease Control amid the COVID-19 Pandemic" to show scholars around the world the strategies Taiwan adopted to control the COVID-19 epidemic. Additionally, the Center reviewed policies on drug R&D and patents, information monitoring, as well as quarantine and travel restrictions on the Preparedness of Rule of Law and Human Rights Protection During COVID-19 Roundtable and NYCU School of Law Academic Forum. The research



center is also committed to establishing international collaborations, participating in public health and epidemic prevention organizations, promoting epidemic prevention-related research projects, and establishing Southeast Asia regional joint protection measures with countries such as Thailand and Vietnam.

Healthy Communities in Outlying Islands

NYCU's Community Medicine Research Center has collaborated with the Ministry of Health and Welfare for 15 consecutive years (2007-2021) to implement its "Healthy Communities in Outlying Islands" project. In total, the center has provided guidance to 23 offices across Kinmen County, Penghu County, and Lianjiang County. The project is addressing three major common topics: (1) Community prevention and treatment of tuberculosis, (2) promotion of healthy aging at home, and (3) immigrant outreach. The Center established the "Health and Human Rights Education Website", an informative website with comprehensive information on a wide variety of health issues, including risk factors for common mental and physical illnesses such as "healthy Body Mass Index (BMI)" and "sleep health"; mental and physical illnesses that can cause serious disability, such as "emotional health" and "eye health"; the government's key disease prevention targets, such as "smoking cessation" and "tuberculosis prevention"; as well as emerging diseases such as "Internet addiction". The Health and Human Rights Education Website also provides detection functions for various health issues, supplemented by comprehensive health education services in hopes of implementing preventative healthcare in everyday life to better the mental and physical health of the public.

Transnational Research Exploring Biodiversity and Diseases

NYCU's professors from the College of Biological Science and Technology collaborated with scholars from China, Japan, and Europe to collect and analyze data, looking into the evolution and life history of the stone moroko fish (Pseudorasbora parva) and how climate change has affected its numbers. NYCU also implemented Taiwan CDC's bilateral research project "Epidemiology and molecular epidemiology of protozoan infection in Taiwan" with "Japan's National Institute of Infectious Diseases," collecting relevant data for further research. Additionally, Associate Professor, Hsin-Jen Chen and his students collaborated with hospitals in India to learn about the nutrition, dietary preferences, and behaviors of Muslims with diabetes during Ramadan in order to improve their health conditions.

Social Impact

Promoting Information Education in Remote Rural Communities

"NYCU's Jullay International Volunteer Team" to India has long provided volunteer services at the Jamyang School, a boarding school located in the foothills of the Himalayas in Ladakh, India that provides free education for economically disadvantaged students. Since 2010, the Jullay International Volunteer Team to India has traveled to Jamyang School during the summer to provide educational services , gradually helping Jamyang School develop digital learning resources that will allow students to learn on their own, using the convenience and richness of digital technology to alleviate some of the problems of education inequity. The team also continues to plan and promote online sponsorship programs digitally and will collaborate with the "Formosa Budding Hope Association" to find sponsors that will allow the children to further their education so that they can change their future and give back to the community.

Helping People with Technology and Promoting Science and Programming Education

Based on years of volunteer teaching experience, the University's Department of Electrophysics and Department of Applied Chemistry worked together to develop the "Fun with Chemistry" teaching aid for the teachers and students of Hsinchu County's Guangming Elementary School, "Hsing Lung Elementary School," and "Shih Hsing Elementary School." Aside from promoting programming concepts with easy-to-grasp board games, students from the Department of Electrical and Computer Engineering also worked with the "Boyo Social Welfare Foundation" and the Taiwan Fund for Children and Families to actively promote programming science learning experiences through Lego EV3 robots. The students held a series of Lego robot workshops for disadvantaged children who otherwise may not have the resources or opportunity to play with Lego robots. In these workshops, the children learn to build Lego robots from scratch, working with the university students to exercise their creativity and write programs to create robots of their own.

University Social Responsibility Project - Tribal Star Incubation

NYCU's social responsibility project “Tribal Star Incubation: Intelligent Health for Remote Areas” collaborates with non-governmental groups such as the Rotary Club of Taipei Fu-Jung, the Rotary Club of Taipei Sun Young, and the Taiwan Atayal Language and Culture Research and Development Association, connecting local resources and medical teams in Nan'ao and Yilan to establish partnerships of diversity and mutual learning, thereby integrating indigenous wisdom and digital healthcare technology to address the healthcare needs of rural areas.



Global Humanities Institute

Sponsored by the Higher Education SPROUT Project through the Ministry of Education, the International Institute for Cultural Studies (ICCS) launched the 5-year project "Conflict, Justice, and Decolonization: Critical Studies in Inter-Asian Societies" (2018-2022). With the







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Students who chose the Course Units

research goal of promoting equality, justice, and peace, ICCS established partnerships with 12 international academic institutions, forming a research team of 36 experienced researchers and 24 young scholars from around the world to engage in discussions and establish the "Global Humanities Institute", focusing on the theme of "migration, logistics, and inequalities of the current global context". The "Global Humanities Institute" received grants from the Consortium of Humanities Centers and Institutes and the Mellon Foundation. Its goal is to combine the research of interdisciplinary scholars to discuss how different societies develop exclusionary, discriminatory, oppressive, and violent ideologies, laws, and institutions, focusing on the social conflicts and inequalities in third-world countries and in particular the mass migration of refugees, mobile laborers, stateless persons, and human trafficking victims. Through exchanges with scholars and transnational NGOs, the institute also thinks about how to propose more inclusive discourse and amend inappropriate laws and policy proposals. Plans for the "Global Humanities Institute" not only involve suggested reading materials for scholars around the world but also monthly online forums with NGOs. Through discussions and sharing research the institute hopes to help scholars and students from around the world enrich one another's research outcomes.

Student Cultivation

Promoting Remote Higher Education Courses in Collaboration with the Association of East Asian Research Universities

As a member of the Association of East Asian Research Universities (AEARU), NYCU hosted the "2020 AEARU Innovation & Entrepreneurship Winter Program" in collaboration with National Taiwan University's Office of International Affairs. The program was attended by 48 students from 20 top universities across 8 different countries. Seeing as the COVID-19 pandemic made it hard to promote international higher education, NYCU and the AEARU Secretariat worked together to develop the Global Learning Initiatives Program, offering professional courses taught in English for students from 19 member universities. Four colleges in NYCU (the College of Electrical and Computer Engineering, International College of Semiconductor Technology, College of Hakka Studies, and the School of Law) offered 7 remote learning courses taught in English, the highest number of courses offered by any member university. These courses attracted 57 students from member universities. Additionally, because students are unable to travel abroad due to the pandemic, NYCU worked with sister schools abroad to offer students more international experiences, encouraging students to take online short-term elected courses and dual-degree programs offered by these sister schools and conducting international exchanges with top sister schools to increase opportunities for interdisciplinary learning.

Erasmus+ Youth Talent Education Program

In 2014, the EU launched the "Erasmus+ Youth Talent Education Program," which was implemented until 2020. The program encourages member countries to work with partner countries to promote personal learning mobility, innovation, and policy innovation support, etc. Since 2015, NYCU sister schools in Europe have invited NYCU to apply for the Erasmus+ project as a partner school. Collaborations between partner schools include exchange programs for teachers, students, and employees. Over the years, NYCU has worked with Poland's Cracow University of Economics and Turkey's Koç University, Maria Curie-Skłodowska University, Norway's University of Agder, France's University of Bordeaux, and Belgium's Hasselt University. To date, 6 faculty members, 11 students, and 3 staff members have participated in international exchanges facilitated by the program, generating meaningful and mutually beneficial interactions in terms of academic affairs, school administration, and professional fields.

Cultivating Global Health Leaders

Since it was established in 2003, the NYCU International Health Program has trained a number of health officials and decision-makers around the world. Working with the International Cooperation and Development Fund, the International Health Program established a national health system program that provides online classes for students in Taiwan's ally countries in addition to sharing Taiwan's successful epidemic prevention experiences during the pandemic. During the pandemic, Ph.D. student Mduduzi Colani Shongwe from the African country Eswatini collaborated on a large-scale transnational study with NYCU professor Sung-Li Huang to investigate the mental health and willingness to get vaccinated among the general public and frontline health workers in Eswatini.

Sixth Fuel USR Courses

A team led by Professor Wen-Shu Lai launched the Hsinchu Living Museum Project to promote environmental and ecological education and introduce the public to military village culture and the Hsinchu Sixth Fuel Factory, a WWII historical and cultural heritage site. The team has organized 13 promotional campaigns and courses, showing residents and students the ecological and cultural significance of the Hsinchu Sixth Fuel Factory to protect the sustainable development of the local culture.













Interntional Partnerships

NYCU is committed to collaborating with local government agencies as well as universities and research institutes from around the world to achieve the Sustainable Development Goals. In 2018, the Chiao-Tung Campus and TAISE signed the Letter of Intent on Sustainable Development Cooperation. The University also worked with multiple other government agencies and international institutions:

- In collaboration with the Sayling Wen Cultural & Educational Foundation, NYCU established the University Alliance in Talent Education Development (UAiTED) to cultivate future industry-academia talent worldwide.
- As a member of AEARU, NYCU helped to develop an online classroom program so that students and teachers worldwide can learn together in diverse ways.
- NYCU also founded the Global Citizenship Education Center, encouraging scholars in Taiwan to participate in UNESCO events.
- Working with 11 academic institutions across 7 countries, NYCU founded the Consortium of Global Hakka Studies to pass on Hakka cultural experiences and encourage interactions and sharing in the international academic community.
- NYCU was also commissioned by the Ministry of Economic Affairs (MOEA) Water Resources Agency to plan and manage the "Nanliao Water Resource Startup Hub" to help promote the development of emerging water resources.
- NYCU helped the government encourage medical institutions to apply for smoking cessation services to improve the quality of smoking cessation treatment services and provide a reference for tobacco hazard prevention policies.
- The Ministry of Health and Welfare's Department of Mental and Oral Health commissioned NYCU to conduct quality management and effectiveness assessment of the “Integrated Drug-Addiction Treatment Model Pilot Project".
- NYCU was commissioned by the New Taipei City Water Resources Department to implement the "Smart River Planning and Smart Flood Prevention Platform Construction Plan".
- Working with TSMC, the University founded the TSMC x NCTU Energy Education Center, a high-quality learning environment in a sustainable building that provides lifelong learning opportunities for all.
- NYCU was also commissioned by the Hsinchu City Cultural Affairs Bureau to host its "Home Under the Big Chimney" neighborhood outreach and residency project.
- With the Community Angel and Yang-Ming Crusade volunteer groups, the Yilan City Office, village chiefs across Yilan City, and the chairmen of community development associations, the National Yang Ming Chiao Tung University Hospital conducts full interviews and assessments of senior citizens over the age of 65 in Yilan, providing care and necessary support for senior citizens with urgent needs.
- As part of the Ministry of Education's Aesthetics and Design Curriculum Innovation Plan, the University promotes aesthetic education and teacher empowerment training to improve the public's aesthetic literacy.

Members of AEARU