



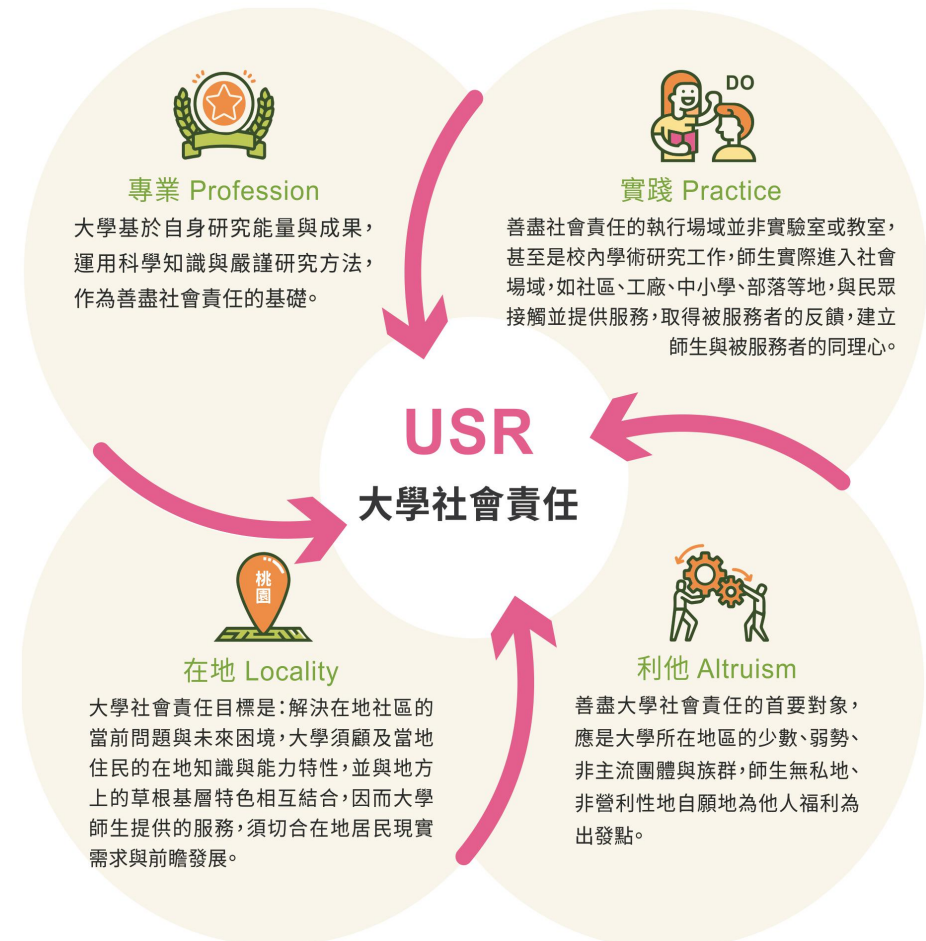
National Central University
University Social Responsibility
Annual Report 2020

VISION

The National Central UNIVERSITY(NCU) is the first university to initiate sustainable development program in Taiwan. With the school motto of "Sincerity" and the vision of "a world-class university with deep humanistic care", the NCU has blended dynamic academic energy into local needs and devoted to striking balance among economic, social development and environmental protection, in order to achieve mutualism and the ideal way of running school of sustainable development.

The Social Responsibility Office (SRO) embraces the positive beliefs of co-existence and co-prosperity with the local communities, which were rooted in the core values of university social responsibility: profession, practice, locality, and altruism, by the exercise of our professional knowledge, beyond the traditional functions of research, teaching service and counseling. The teachers and students go to the practical field to provide grass-roots public services, solve the actual problems of the residents, and deepen the sense of identity and social influence

The core values of university social responsibility



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- Office of Student Affairs
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Office of Student Affairs

Community Service Learning curriculum for Citizenship

In order to implement the epidemic prevention of COVID-19, National Central University advocated the spirit of "Heaving ability, helping the prevention" and encouraged students to be volunteer for epidemic prevention expeditiously.

Since the beginning of the year, more than 200 students have joined, grouped according to their wishes and expertise to practice various epidemic prevention social services, and become epidemic prevention vanguards.



Office of Academic Affairs

Garden Party Charity Performance

The student community, A Cappella, applied their musical skills into practice around the local communities and the campus and then fulfilled the social responsibility. In November and December, there were two Garden Party Charity performances held. The first performance was in International Children's Village. With pure singing and inspiring lyrics, it brought laughter among those children and encouraged them to pursue their favorite things, just as they sing for giving people hope. To responding the invitation of Catholic Angel Center for the Development of Disabled, the second performance was presented at Heavenly Love and Thanksgiving Fundraising Fair. The aim of this fair is to share love during the COVID-19. The participants could enjoy and relax with soft melodic singing voices and various kinds of lovely services and venders. At the same time, they can be the partners for the center to help the disabled. Both activities above mentioned showed evidence that the student community makes efforts to public service which not only results in building the students themselves up a local identity, but also generating social influence on those participants.



Office of Academic Affairs

National Central University and Kagoshima University's International Exchange on Regional Revitalization Issue

In order to fulfill the social responsibility and learn the experiences of regional revitalization, the student community NCU-Game-Creator held an online meeting with Kagoshima University in Japan. During the meeting, they shared the history of how to develop a game by cooperating with Xinwu Hometown-loving Association. This game was designed to integrate with the local tourist spots and ecological environments, for they had hoped that players could discover the natural beauty of Xinwu and that the local tourism industry would be enhanced. On the other hand, the students from Kagoshima University shared the Old House Refurbishment Action in Kinko, where is a small town surrounded by mountains and rivers, and the people are simple and honest. The student team converted the old and sitting-idle house into a guest house, and carried out a local revitalization plan. The team expected that the world could explore and know the beauty of their hometown, and that they could put native produce and specialty foods of Kinko on the map. The above mentioned devotion and experience were inspiring for both sides to enhance creativity and to solve problems when it comes to implementation. For the part of NCU, we have been benefited greatly to push the local revitalization of coastal zone in Taoyuan forward with renewed vigor.



Office of General Affairs

Go green to protect our planet

Our university follows the Four Rs" reduce, reuse, recycle and recovery" of the Environmental Protection Administration. Taking recycling and reusing as our purpose, we organize one or two environmental protection activities to promote the concepts of recovery and sustainable utilization of resources every year. We hold "replacing 10 waste batteries with a new one" activity regularly and recovered about 400 kilos of waste dry batteries (about 16,000 waste dry batteries) on average every year. The idea of "waste dry batteries should be recovered separately" is deeply rooted in our personnel, students, and their relatives.

With our promotion of the concept of waste reduction, sorting, and recovery, the average recovery rate has been increasing yearly from 30% in 2014 to 40% in 2020. This shows our effectiveness in resource recovery. We participated the inter-school recycling competition which was held by the Department of Environmental Protection, Taoyuan and we were awarded grade A in 2020.



Office of Research and Development

Promoting regional medical quality and upgrading smart health industrial at Smart Health Innovation Park of NCU Bade Campus

National Central University is the only national comprehensive university in Taoyuan region, and has been committed to long term regional cultivation with industry, government and the academy. Taoyuan City Government provides a 2.56-hectare land in Bade district for NCU's extended campus and anticipates to enhance local economic prosperity.

The mission of developing Bade campus has been organized into NCU's Long Term Strategic Plan, and the developed plans are as follows:

1. Smart Health Innovation Park
 - research on smart biomedical and sports technology, such as precision medicine, telemedicine, remote home care, etc.
 - cultivation of multidiscipline biomedical talents
2. Specialty medical center of Asia:
 - smart health care facility
 - globe smart health care hub
3. The start-up base and training center for international talent:
 - international college of start-up
 - incubation base of smart health start-up
 - global research and industry alliance



Office of Research and Development
2020 Taoyuan Innovation Day, establishing a sound innovation and incubation platform

Taoyuan City Government has recently promoted various entrepreneurial policies actively. National Central University also held some startup competition and encouraged the youth to bring forth new ideas. In order to help startups to get funding and find their feet, the Department of Youth Affairs, Taoyuan and our school jointly put on the exhibition of “2020 Taoyuan Innovation Day” on October 27, 2020, and invited 55 startup teams to exchange ideas and try to raise the limit of the sky. Also, by practicing a fundraising and using matching-service platforms for startups to have in-depth conversation with Venture Capital(VC), accelerator,etc. We hoped that there would be a good judge of talent putting innovations into practice, and made Taoyuan a capital full of innovations and entrepreneurship.



Library
NCU Library and COVID-19

Since the outbreak of COVID-19 pandemic, NCU library has implemented prompt protective measures to ensure the safety of NCU patrons. First, online research guides and free resources have been collected and organized for students to use remotely. To enhance the online learning and research, NCU library has provided virtual database classes and workshops to researchers. In addition, library events and activities have been developed and promoted to raise the awareness of pandemic prevention and social distancing. For example, COVID-19 book exhibitions have been featured and pandemic talks and speech have been delivered last year. Overall, COVID-19 still has a huge impact on our lives, and NCU library will keep

making every effort to support our users. KEEP CALM AND CARRY ON.



Office of International Affairs
Global Education and Mobility

1. To enhance student mobility, Office of International Affairs develops several supporting strategies, such as provide with subsidy for disadvantaged students, who are to participate in the going abroad program.
2. Continously encourage students to join Going Abroad Session, where provide more detail in-formaton regarding studying in foreign countries.



- College of Liberal Arts
- College of Science
- College of Engineering
- College of Health Sciences and Technology
- School of Management
- College of Electrical Engineering & Computer Science
- College of Hakka Studies
- Art Center
- Office of Physical Education



College of Liberal Arts promote Rural teaching quality and mutual understanding

In the five years, the teachers and students in the department of Chinese Literature do many services in rural elementary school and disabled persons agency. The students say Chinese stories for the elementary school students and do some activities for disabled persons. They can show what they learned to help the children in the rural. In the other hand, they can learn how to accompany disabled persons. What the teachers and students in the department of Chinese Literature do are meet the SDGs.



College of Liberal Arts Shuanglian Community Memory Collection

The Service Learning Center of Central University and the department of History promoted the "The Second Phase of University Social Responsibility Practice Project of the Ministry of Education: Art Infiltration and Sustainable Community The Rooting and Co-prosperity of Local Culture in Shuanglianli Cultural and Creative Symbiosis Community" "History Reappearance Project", led by Director Su Liwen and Director Jiang Zhushan, undergraduate students went to the Shuanglian community to conduct fieldwork and collect historical stories.



College of Science

Optical Tutorial and Visitation for local science activities

Optical Tutorial

The scientific activity named “optical tutorial” for the junior high school students in Taiwan’s rural areas, was originated by Prof. Cheng-Chung Lee and his colleagues in 2015, and has been held 19 times in the Department of Optics and Photonics, National Central University. This activity has been partially supporting by industrial companies. Our undergraduate students utilize the existing resources in our department to design several electro-optical experiments for the participants. The participating junior high school students experience the scientific details of optics and photonics directly, and understand how are they related to the daily lives. Importantly, the scientific activity can raise their learning interests in science. Furthermore, to clarify the interests in science for the participating junior high school students, such a scientific activity will be continued holding in the future, and will be extended to senior high schools.

Visitation for local science activities

Science Education Center provide K-12 school teachers and students inquiry and practicing science learning patterns for social responsibility, try to solve the situation of education resources lack. Science Education Center hold science events, serve local schools, and supply education resources to teachers and students. The features of the curriculums are cross-cutting and local-cultural.



College of Engineering

Enhancing Vitality for Society and Communities

The College of Engineering strives to play a greater role in regional innovation and development as the creative abilities and strengths of students are brought into nearby communities. By integrating professional knowledge with local culture and industry, students help resolve challenges facing communities and create new opportunities for growth. The College of Engineering encourages students to undertake social responsibility initiatives including scientific experiments for kids, COVID-19 prevention services, a visit to a wastewater treatment plant, building checkup, and volunteering activities. Aligning with the United Nations Sustainable Development Goals (SDGs), the College of Engineering aims to enhance the prosperity between university and communities, making contributions to sustainable local development and incorporating social responsibility as an important objective in education mission.



College of Health Sciences and Technology

The promotion and extension of artificial intelligence and innovative sciences in elementary education

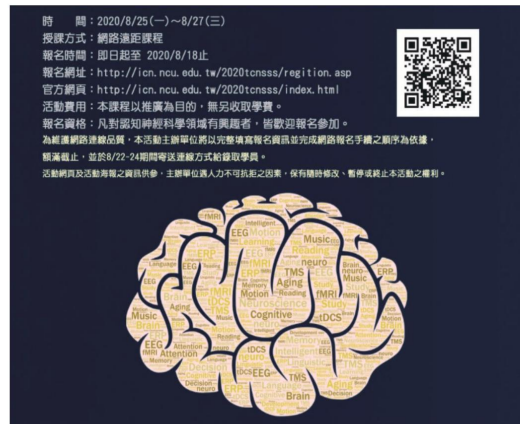
The DBSE devotes to the promotion and extension of artificial intelligence (AI) and innovative science (IS) to the local elementary gifted education of Taoyuan. The goal of this activity has two parts. First, we introduced the historical allusions of AI and its contemporary development. Then we also illustrated its technical frameworks and the relevant experimental implementation and guidance. Secondly, we also assisted in the interview simulation of the invention exhibition, the production of children's inventions, taught them physics principles also programming skills, and then provided data science and practical science education service. The purpose of this service is to extend the most contemporary representative AI technology in university-side majors from shallow to deep down to the content of elementary gifted education. To introduce the foundation of data science and practical science, we paid much energy to teaching children how to fuse those AI things and their daily life. We hope this activity can deepen and broaden the cognition and innovation for children in AI and IS. Then, we wish to cultivate their sense of mission to utilize AI and IS skills to serve society with practical purposes.



College of Health Sciences and Technology

Develop large-scale systematic AF screening program in the community

Atrial fibrillation (AFib) is the most common, with an overall prevalence of approximately 1% in the general population and a fivefold increase in the risk of stroke. It inflicts a significant burden in terms of morbidity and mortality, from stroke and heart failure, translating to significant effects on health-care costs and resource use. To develop an efficient and sustainable strategy for detecting undiagnosed AFib, the biomedical engineering team of NCU proposed a cloud-based artificial intelligence system for arrhythmia screening, especially for AFib. This system can be ubiquitously connected by incorporating with mobile devices in health examination with real-time feedback. Starting in 2019, NCU cooperated with Buddhist Tzu Chi Medical Foundation and health institutions of Taipei, Chiayi, Tainan, and Pingtung and on large-scale AFib screening. So far, over 20,000 people had been screened and 2.6% of AFib detection rate over 65.



College of Health Sciences and Technology

Promote basic knowledge of cognitive neuroscience Share the results of cognitive neuroscience research Promote academic exchanges in cognitive neuroscience Cultivate cross-domain cognitive neuroscience talents

All teachers of the Institute of Cognitive Neuroscience are dedicated to promoting cognitive neuroscience research. The Cognitive Neuroscience Workshop is jointly organized with Chung Yuan Christian University in March and the Taiwan Cognitive Neuroscience Summer School is held in August. Due to the impact of COVID-19, the 2020 Taiwan Cognitive Neuroscience Summer School will adopt online distance courses for the first time, attracting 1,151 students from all over the world to sign up. In Taiwan, it includes college students and researchers, primary and secondary special education teachers, and consultants from various institutions. Business and occupational therapists participate in this course. There are 22 classes planned for this summer school, starting with an introduction to cognitive neuroscience and future prospects, and the course introduces brain imaging tools (fMRI, EEG, ERP, tDCS, TMS) and related research equipment such as eye tracking and motion capture Taker. In addition, through various topics such as language learning, reading development, motor cognition, memory, neuroeconomics, social cognition, aging and cognition, infant and child development, education and music, combined with cognitive neuroscience to form an interdisciplinary curriculum. In addition, through different communication media such as speeches and online platforms, the academic research results of brain and mental science can be promoted to all levels of society. In addition to gaining public attention and response, brain and mental science research is more popularized and implemented in various teaching sites. At the same time, it is hoped that the general public will have more understanding of cognitive neuroscience, more understanding of people with cognitive impairment, and implement the application and development of professional skills in this field in practice and clinical applications.



College of Health Sciences and Technology

Promote environmental education service learning courses in primary school and implement social responsibilities

To assist the operation of the Smart Biotechnology Education Center, and to plan courses to train students to obtain biotechnology-related certificates.

To develop biotechnology and medical related courses, and to assist in the establishment and operation of the Smart Biotechnology Education Center, which could provide on-the-job continuing education hours and civil servants' study hours certification. Continue providing biology-related courses to neighboring high schools. In line with the 108 education curriculum guidelines of high school which focus on cultivating core literacy. The department will provide diverse programs and courses which include elements such as observation, inquiry, and practice, thereby rearing talents and recruiting outstanding high school students to join our department.

From April to June 109, a total of 14 students from our department participated in the environmental education service-learning activities in Zhongping Elementary School, designed activities for environmental education topics, and served a total of eight classes in two tiers each.



School of Management

“Innovative teaching of social business and social practice” & “Hope Media Award”

The Yunus Social Business Center at NCU promotes cross-teaching unit integration and social participation of students. We look forward to improving students' practical experience in industries, social participation, initiative awareness of social topics, and motivation to try to solve problems through promoting Independent Study in Service Learning Projects on Social Business and establishing the micro-courses of Value Map, the program of Social Business and Social Innovation, and the independent study courses of social business practice.

The first half of 2019 held the "2rd Hope Media Award Final", including "Impact Photographer", "Impact YouTuber", and "Impact Mangaka". The judges scored all art works and gave feedbacks to all contestants at "2rd Hope Media Award Final and International Forum", and the top three groups were awarded. The theme of the International Forum was "Impact Media for Social Good", which invited famous speakers from the United Kingdom, the Philippines, and Taiwan to share how to use media to create impact. The second half of 2019 held the "3rd Hope Media Award Semi-final" and we received 67 teams of "Impact Photographer", 34 teams of "Impact YouTuber", and 18 teams of "Impact Mangaka". All contestants had to participate in the workshop to learn from the lecturers. Each team submitted their assignments given by the lecturers regarding charity topics for contestants to take photos, make short films, and draw mangaka in the NCU campus. Each team submitted their works during that day and the top 20 teams were selected to the semi-final.

Each team who entered the semi-final was required to participate in the "Impact Media Marathon" and created works for a charity Model within one day. The top 10 teams of "Impact Photographer", "Impact YouTuber", and "Impact Mangaka" advanced to the final.



College of Electrical Engineering & Computer Science

Flipped rural medicine : IoT combined with technology to create a remote classroom of rehabilitation medicine

The research team of professor Shih-Ching Yeh and Hsiao-kuang Wu of the department of computer science & information engineering join the project of "early intervention in the rural area" of Ministry of Science and Technology, combining computer science & information engineering, special education majors and Internet of things to build a cloud platform. The "family-centered" evaluation system for early intervention in interviews of families daily lives allows children with developmental delay in rural areas to have better treatment and ease the burden on parents.

The department of computer science & information engineering offers the course, "Informatics and social service," which connects the professional competence of information engineering with society. Due to the impact of COVID-19, project-based learning approach is implemented into this course. This course not only improves students' technical skills, but also helps students understand the importance of citizen cultural literacy and social practice, guiding them to think about their own life values and plans, such as "fundamental competencies and concepts of service-learning." In addition, students can learn the skill of making videos as the teaching materials for computational thinking in the course. Moreover, the department of electrical engineering and the department of communication engineering organize "scratch programming camp for kids" and "2020 NCU electrical engineering camp", so that students can learn the truth of "Happiness may be found only by helping others to find it." through serving others. Also, sharing their engineering and communication expertise with others enhances the soft power, such as teamwork and project execution.



College of Earth Sciences

Pioneers of Disaster Preparedness- College of Earth Sciences, National Central University

The teachers and students of the College of Earth Sciences, National Central University, contribute to society through professional research and analyses, protect the environment of Taiwan, actively promote earth science education, and assist in arousing the interest in earth science of neighboring senior high school students. We strive to fulfill the university's social responsibilities, implement government policies and measures proactively and preventatively, and reinforce the safety and sturdiness of the infrastructure effectively to guarantee the safety of all people in society.



College of Hakka Studies

Hakka Revitalization and Promotion

Language is the carrier of culture. Without the transmission of language, the culture of an ethnic group is bound to disappear. The Hakka Basic Act amended in 2018 has listed Hakka as one of the national languages of Taiwan. The College of Hakka Studies is bound to play a key role in the preservation, revitalization, and promotion of the Hakka language. The College has successively promoted the “Taoyuan Training Course for Hakka Educators” project, “Subject Terminology Hakka Language Compilation Workshop”, and “Hakka Dictionary and Proverbs” database website. Furthermore, it has engaged in multiple promotion and research projects, such as “Healthcare Personnel Hakka Workshop” and “Hakka Teaching for Foreign Caregivers and New Immigrants”, so that they are able to aggressively participate in the policies and initiatives that help revitalize Hakka. In this way, Hakka language support teachers and educators are able to cultivate more Hakka language professionals through professional training and examination. Moreover, such professionals may also be willing to participate in the revitalization and promotion of the Hakka language in the future. The international symposiums and conferences on “Language Policy and Development for Hakka Language and Internationally Ethnic Minorities in Taiwan” are expected and planned to be held in the future in order to reach consensus that may help form a reference for the Taiwan government to promote language policy.



Art Center

The Promotion of Cultural and Art Activities in Taoyuan

Because of the spreading of COVID-19 in 2020, many of the arts and cultural activities around the world are canceled. To make the art education keep going on and let art workers still have opportunities to perform, however, we assist Taoyuan Land Art Festival, Taoyuan Film Festival, the MV shooting of T.S.D dance group, the MV shooting of “Feat Dreamer” tap dance group, the performance of teenagers theatre program, the performance of Bear Theater “Emma” and the performance of The Bleinders and so on. Also, we recruit the students to become the volunteers to execute and promote the activities. Above all the execution, we do well on COVID-19 prevention. In this way, the public can participate in the cultural and art activities and immerse in the art in security. Those activities are cooperated with social reasonability office in school. We participate the art project in the community in Taoyuan, assist numerous activities and connect our college with the local community.



Office of Physical Education

Creation of a Sports Campus Prosperous with the Local Community

“Physical Education” focuses on the development of physical health and the ability to enjoy daily physical activities. The PE Office create a wallless and community coexistence and co-prosperity environment, and responds to the government's spirit of promoting sports for all and community services, and continues to improve the school's sports software and hardware equipment, so that all teachers, students, family members, and surrounding communities can fully enjoy the school's rich and complete sports facilities, improve the national health index, reduce the waste of medical resources, and promote the concept of overall community construction.

The establishment of “Taoyuan City X NCU Civil Sports Center” is the first in the country to cooperate with local governments to create a venue for citizens to exercise recreation and health promotion. In the future, it will combine the school's existing sports facilities and smart health testing center to provide a more comprehensive and closer approach. Sports environment demanded by the people. Also, the school's sports facilities are entirely using. Besides providing teaching and general public use, it organizes sports events, promotes the development of a sports atmosphere, and creates the PE Office value, making Taoyuan a city of hope and health and a university society. Responsible practitioner.



- Research Center for Hazard Mitigation and Prevention
- Center for Space and Remote Sensing Research
- Research Center for Taiwan Economic Development humanities

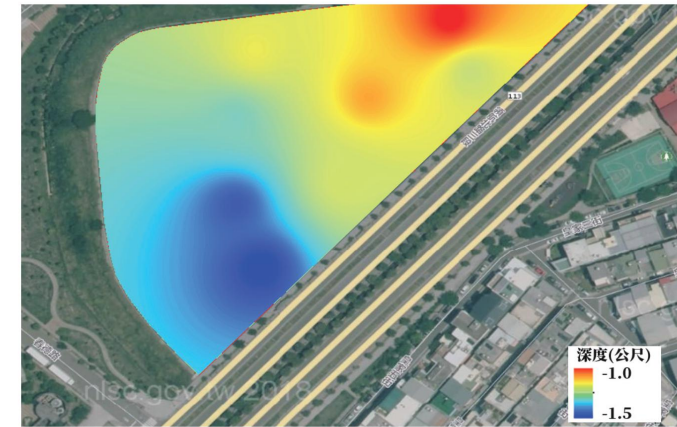


Research Center for Hazard Mitigation and Prevention

Cultivate the disaster prevention literacy and ability of Taoyuan citizens with NCU's disaster prevention specialty and local service spirit

National Central University Research Center for Hazard Mitigation and Prevention has continued to cooperate with Taoyuan City Government in the spirit of offering the professional local service. We promote the “resilient community” with the residents from some villages in Taoyuan. By holding the activities, we are dedicated to make the residents to have the higher

sense of disaster prevention, correct concepts, home protection skills and implement the improvement of the community’s disaster prevention capabilities, so that the community has a higher tolerance for disasters and achieve the purpose of community sustainability. Our mission is to prove that National Central University exerts the spirit of local service.



Center for Space and Remote Sensing Research

Satellite Remote Sensing for Environmental Monitoring and Sustainable Development

Taoyuan has been well known as the “County of Thousands of Ponds” for its domestic and irrigation water storage purposes. However, after the operation of Shihmen Reservoir and the change of land use due to urbanization, the number of ponds had decreased from more than ten thousand to a few thousands nowadays. Many ponds had also been renovated from irrigation to aquacultural and leisure purposes. As time being, the number of ponds and the volume of each storage facility needs to be updated. In this year, the team in CSRSR had utilized a remote sensing module consisted of an unmanned aerial vehicle (UAV) and a sonar to update the underwater terrain and the elevation of neighboring land for 80 ponds in Taoyuan. This work efficiently holds back potential illegal activities associated with landfill of waste, ensuring the sustainability of land use. On the other hand, an updated database of the capacity of existing ponds could facilitate the planning of pond network as a flood retention/detention system under the scenario of weather extremes.

The CSRSR also assists the Environmental Protection Administration, Executive Yuan in the implementation of river bare land interpretation and detection of agricultural waste burning areas. Satellite imagery can be used for environmental monitoring, assisting in the implementation of air pollution prevention efforts, accelerating the improvement of air quality and effectively reducing people's exposure to air pollution hazards. In terms of environmental monitoring, satellite imagery can be used to observe dust and bio-combustion analysis, and track cross-border transmission events such as haze or continental dust in East Asia in real time. When the phenomenon of dusting and burning of agricultural waste occurs and causes related pollution, the traditional ground investigation is often limited in time and space, and it is difficult to effectively and quickly grasp the overall monitoring of regional environmental assessment and pollution disaster. Because of its large-scale, multi-time, multi-spectral and digital characteristics, satellite images can obtain a wide range of image data, greatly improve the efficiency of the study of river bare land and agricultural waste combustion, so that decision makers can fully grasp the scope of pollution sources, as a reference for relevant pollution control.



Research Center for Taiwan Economic Development

Master the domestic economic situation and fulfill the social responsibility of the university

Research Center for Taiwan Economic Development proceeds with the survey of Taiwan Consumer Confidence Index every month since 2004. As Consumer Confidence Index reflects consumers' perception of economic environment, it can be treated as the poll of contentment for family economy and thus attract the attentions of the mass media and economists. Research Center for Taiwan Economic Development hold press conference 4 times a year. In each press conference, Research Center for Taiwan Economic Development invites scholars in various fields to make comments on the CCI survey and current economic issues. CCI survey and the related comments are usually reported by the mass media and influence civilians' investment decisions and the government's economic policy making.



Humanities Center

**Deep cultivation of humanities
Cultural asset activation**

The primary task of college is education, learning and the production and dissemination of knowledge. The Humanities Center is devoted time and effort to the deep cultivation of humanities, introducing the concepts of "Regional Revitalization" and "Cultural Heritage" into the campus. We treat the campus as a community, and combine with external communities and local governments, through the holding of all kinds of events and the publication of books, to exert an influence on the social responsibility of the university.

In recent years, the government has actively completed the cultural resources law. From the amendment of the Cultural Assets Preservation Law in 105 to the Cultural Basic Law passed in 108, it can be seen that the preservation and activation of cultural assets has been a topic of great concern in recent years. NCU Kunqu Opera Museum's collection and display theme "Kunqu Opera" is already a UNESCO "Masterpiece of Oral and Intangible Heritage of Humanity", and the cultural relics in the collection also have deep cultural value. NCU Kunqu Opera Museum promotes Taiwan's tangible and intangible "activation and application of cultural assets" from the two levels of "academic research" and "art promotion". It is in line with the pulse of national cultural issues. In addition to exerting the contemporary value of cultural assets, it also promotes the development of cultural resources. Social sharing is listed as the goal and highlight of the museum's work. In 2020, we will promote the following responsibilities for photographers: (1), research: "Research and Publication Project of "Taiwan Kun Opera History", "Hsinchu City Traditional Performing Arts Census Project"; (2), special exhibitions, various promotional performances and community activities.

USR-HUB

- ▶ Impact Entrepreneur Lab
- ▶ G5 Socio-scientific Sustainability Curriculum Design for Primary and Secondary Schools
- ▶ Oceanic Sustainable Development
- ▶ Climate change on the table

University Social Responsibility (USR) Program

- ▶ Sustainable Taoyuan Coast
 - Facilitating the Sustainable Development of Taoyuan's Coastal Environment and Culture
- ▶ From Atayal Reading to Interest-Driven Tribal Learning
- ▶ Arts & Culture Infusing a Sustainable Community: Broad Benefits from Deeply Implanting Local Culture in Pingzhen, Zhongli
- ▶ Sustainable Fuxing – Building Smart and Resilient Tribes
- ▶ Reengineering of Yangmei District's Social Value Project



Impact Entrepreneur Lab

The IE Lab program training students to use social value tools and walk into the local community. We invited instructors from the industry to guide the stakeholder interviews, constructed the data of social value, and entered local communities and organizations to execute practical operations. We cultivate students' skills by using social value management tools to enhance students' expertise in this field. And students were involved in local communities and contact with relevant topics and targets in person, which can implement social participation and enhance their employment competitiveness.



G5 Socio-scientific Sustainability Curriculum Design for Primary and Secondary Schools

G5 Socio-scientific Sustainability Curriculum Design for Primary and Secondary Schools > guided higher education students to design interdisciplinary teaching materials and learning games with the integration of G5 elements: Game, Goals, Geography, Group, and Gadget. The goal is to use the remote sensing system and data to teach the primary and secondary school students to understand the SDGs environmental, ecological, and human development issues. The first year project outcome is the completion of a virtual reality integrated interactive sandbox system with a game-based course design to learning typography and geographical actions, such as endogenetic and exogenetic forces. Students can learn real-life science and environmental concepts through the hands-on learning process.



Oceanic Sustainable Development

This project was planned and conducted by a team of undergraduate students from the Department of Earth Sciences, National Central University (NCU). Applying the electrical resistivity imaging (ERI), a geophysical exploration technology that they had learned in the class, they explored in this project the status of the industrial waste landfill near the mouth of Shinjie River in Taoyuan District, Taoyuan City in this project. Students participated conducted a site survey at the mouth of Shinjie River on August 14, 2020, and discussed geo-electrical survey lines planning at the target area. In late August, at the NCU campus, they conducted a drill of field procedures, measurement procedures, and instrument operations before the field investigation. Then, weather and coastal conditions were closely observed in the early September, and field data collection was eventually carried out at the mouth of Shinjie River. After collecting the field data, the team immediately analyzed and calculated the underground resistivity structure in the laboratory. As a result, they have gained a good understanding of the resistivity characteristics of the region 20 meters below the surface in the resistivity profiles. According to the preliminary results, the underground of the survey lines is suggested to be a normal layered-earth stratum, meaning that the problem of industrial waste landfill should no longer exist after it was cleaned up.



Climate change on the table

This project was in partnership with the local communities in Xingping Village to promote connection and interaction between the campuses and local areas. The project was scheduled to include four weekends of stall setup activities in the Velarium Plaza at Xingping Village from October to early November during the second semester of 2020 academic year. The goal is to advocate the environmental and climate change concepts to the public to promote environmental awareness, inspire the public to examine if their lifestyle behaviors also contribute to the environmental changes, and rethink their life patterns. We also engaged in various activities such as Q&A rewards, billboard advocacy, board game education, and other interactive publicity methods to enable the public to participate in a more intimate and relaxed manner and effectively advocate climate change awareness.



Sustainable Taoyuan Coast – Facilitating the Sustainable Development of Taoyuan’s Coastal Environment and Culture

NCU is committed to the University’s development based on the tenet of sustainable development. In practicing its social responsibility, NCU has spared no effort in safeguarding the homeland security, national disaster monitoring and prevention, and has even made cross-border assistance to help Southeast Asian countries in responding to the disaster risks engendered by climate change. NCU has worked with Taoyuan City Government on the “White Paper on Conservation of Taoyuan City’s Coastal Ecology” since 2015 to plan for the sustainability of Taoyuan’s coastal environment. This initiative chimes in well with MOE’s University Social Responsibility Program. Therefore, with the MOE USR Program’s subsidy, as well as the already existing cooperation framework with local partners along Taoyuan’s coastline and all bureaus and offices of Taoyuan City Government, NCU takes immediate actions to work with local residents, the local government, and Taoyuan’s USR alliance for the promotion of a green coastal corridor that ensures sustainable development of the ecological environment of Taoyuan’s coast and the community residents therein.

NCU uses the results of scientific and empirical studies (coastal environment monitoring data) to form the basis of dialogue for environmental protection versus development, including issues concerning natural environment, community development, and preservation of local culture. Local culture is protected, while development of the coastal communities is promoted by means of advocating social enterprises. Cooperation with local residents is established to work on the sustainable development of coastal communities by monitoring coastal environment, taking conservation actions, offering environmental education, and promoting social enterprises, etc., in order to re-present the charm of Taoyuan’s coast.

Taking the need for sustainable development of community into consideration, the integration of “Ecology, Living, and Economy” is upheld to ensure robust local environmental education and social enterprises, develop low-impact environmental education and tourism industry, establish the green coastal corridor of Taoyuan, and pursue creative coexistence and revival of local environment and community through coastal environment monitoring and environmental conservation actions.



From Atayal Reading to Interest-Driven Tribal Learning

All elementary and middle schools in Fuxing District, Taoyuan City implement the MSSR model, and the Curriculum Strategy Alliance has invited our project team to conduct a full-day co-training for teachers in Fuxing District, so that more teachers can understand and participate in this project and improve their teaching profession. After participated in the reading training of our project, 11 teachers obtained the reading guiding license of the Department of Education, Taoyuan City Government. Furthermore, Teachers in Fuxing District designed cross-domain theme teaching plans and implemented in class based on the MOSA TAYAL Atayal board game designed by Professor Julie Shi; Professor Ben Zhang trained our college students to cooperate with Changxing Elementary School teachers to assist students in self-directed learning by using the "Mathematics Island" platform, and the second-grade students showed a significant improvement in their mathematics performance. In addition, the board game "Meet Atayal", a result of the previous plan, is integrated into the social and exploration courses of Jieshou Junior High School. In cooperation with the Civil Affairs Office of Fuxing District, Taoyuan in the early stage, the book of "Atayal Life" was published this year and was used as teachers' reference book for the "Encountering School" course of Jieshou Elementary School, for the "Tasting Taoyuan" course of Sanguang Elementary School, and also as the reference book of ethnic resources or class reading book in each school.



Arts & Culture Infusing a Sustainable Community: Broad Benefits from Deeply Implanting Local Culture in Pingzhen, Zhongli

National Central University treats humanistic caring and social sustainability as the core of our school development; we place our focuses for practice in performing our university social responsibility to the utmost, and in establishing a sustainable ecosystem. Thus, the key points for implementation of this program are cultivating humanistic qualities and social caring, and deeply implanting local arts & culture to create local sustainability. In terms of cultural affairs, through joining hands collaboratively with public agencies and our neighbors, we proactively enliven and preserve the local traditions of Pingzhen, Zhongli; continue to formulate medical Hakka curricula; pass down and make full use of Hakka festivals; and link diverse populations' arts & cultural activities. We have also established the Shuanglian Village Arts & Culture Creativity Team, which uses both social and cultural approaches to empower the community to take practical action in terms of populations, culture, life, and art. In terms of environmental sustainability, a dedicated platform provided by instructors and students is encouraging local residents to care about their community and foster a sense of belonging among the different populations. This gives rise to investment in local affairs. Through community empowerment that enhances awareness of environmental protection and care for residents' physical and mental health, we build a local community interaction web to achieve the goal of community sustainability.



Sustainable Fuxing – Building Smart and Resilient Tribes

With four sub-programs, we have achieved: 1. “Smart disaster prevention:” Resilient community workshops were held to promote disaster prevention knowledge through a checkpoint challenge, where community members learned while having fun. Also, integrated disaster management was launched by creating disaster prevention software and making a Yisheng Village elevation model. 2. “Smart energy:” Microgrid system assessment and planning was conducted for Xiayun Village, and a mini weather station was constructed in Hsia-Yun Primary School to collect relevant data for subsequent evaluation of green energy potential and local energy education. 3. “Sustainable water source:” Teacher training, water resource education camp, and handmade soap workshop using slop oil were organized to enhance residents’ understanding and practice of water resource issues. Water quality at the upstream of Shimen Reservoir is consistently monitored to accumulate necessary data for studying the cause of eutrophication. 4. “Placemaking:” In collaboration with the District Office, assistance was given in writing up the placemaking plan, with the bamboo industry as the pivot. Together with students of the “Social Engagement” course, we learned the indigenous people’s traditions and generated ideas that combine cultural revitalization with digital leaning.



Reengineering of Yangmei District's Social Value Project

Taoyuan is a multi-ethnic city. The current population of new residents in Taoyuan is about 58,000, which is 4th in the country. Not only that, but the Hakka group is also 3rd in Taiwan. It is a city with diverse ethnic groups, culture, language, Different lifestyles have evolved different customs and styles, interacting with each other, and developing new styles; new resident brides come to Taiwan for deep roots and face many challenges. This plan hopes to lead more students into the community, understand their needs, and play Social influence, and assist new residents in the local women to have innovation and creativity. In cooperation with local schools and organizations, the project has currently carried out 4 activities, including rice dumplings on May Festival, summer movies, Gonghao Cultural and Creative Market, and Fugang Old Photo Exhibition, attracting more than 1,000 visits to the granary. We cooperated with three communities in YangMei District - Ruiyuan, Dadong, and Yuanben for getting fist hand feedback. By using the framework of design thinking, we tried to create innovative prototypes. We expect to solve the pain point of the elderly by tested prototypes so that the elderly can exercise easily without the burden and achieve a balanced diet. Ultimately, we could also test if the prototype is good enough to become the business model for a social enterprise. In the future, in conjunction with the curriculum, more students will be guided to Fugang for resource surveys, to build more local knowledge, and to work harder through cooperation with local organizations to increase the network. Many young people and new residents play a social influence.



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