tional Sun Val-sen University ** 2022 Annual Report of Higher Education Sprout Project

CONTRACTION OF ALL

Institutional Research Professional Management

The Organizational Structure of IR

Provides information to support institutional improvement





Facilitate evidence-based data-driven decisionmaking, and ensure validity, reliability, and availability of data for strategic planning and reporting.



Provide external entities and stakeholders with consistent and relevant information

Institutional Research Professional Management

電子報

發佈單位:校務研究辦公室

Institutional Information Disclosure \rightarrow

IR Information System





Institutional Research Internal Process



IR Newsletter (Quarterly, Since 2019) 校務研究辦公室電子報 第13期 2022.0 無法正常演藝·請款場所要/各部算子的 • 校務研究辦公室電子報 第16期 2022.12 國立中山大學校務研究辦公室電子辨 校務研究辦公室電子報 第15期 2022.09 • 校務研究辦公室電子報 第14期 2022.06 • 校務研究辦公室電子報 第13期 2022.03 富利集點:開介「全球前2% 間の料料 • 校務研究辦公室電子報 第12期 2021.12 10111-01-01-01 校務研究辦公室電子報 第11期 2021.09 = 編約録 校務研究辦公室電子報 第10期 2021.06 近年来,各保留院楼楼所公布的各场世界大都现实,在国内模听管理,也以此渐慢大型的路秘尽管首将升回 不同、領域別的操具、防常被試解或錯誤的使用、因此、自2019年起,美國史丹佛大學的學者與Elsevier合 的最寄名篇,因此也被稱作「全球第2%源央科學家標篇(Work 0201 · · · 日本通知工作用: 第8期 2020.1 校務研究辦公室窗子報 第7期 2020.0 校務研究辦公室電子報 第6期 2020.0 校務研究辦公室電子報 第5期 2020.03 校務研究辦公室電子報 第4期 2019.12 校務研究辦公室電子報 第3期 2019.09 校務研究辦公室電子報 第2期 2019.06 · · 校務研究辦公室雷子報 創刊號 2019.0

Research Topics

Analysis of course evaluation surveys
MI course evaluation data analysis
Analysis of Co-learning students' core competency
Analysis of TOEIC test results
Analysis of UCAN functional
competency 3

Analysis of UCAN common competency

Establishment of Si Wan College for interdisciplinary skills development

- To promote holistic, interdisciplinary skills development at NSYSU, Si Wan College was established by merging the Center for General Education with the Program In Interdisciplinary Studies, and the Institute of Social Innovation starting in the 2020 academic year.
- Si Wan College is committed to the development of young interdisciplinary talent with broad-based skill sets and the ability to integrate a range of resources. In tandem with NSYSU's six major colleges, Si Wan College promotes interdisciplinary learning and provides an educational environment that offers lateral growth and broad-based development built upon a solid general education foundation.





Developing a Collegiate System to Provide Diverse Learning Pathways

Promoted a digital self-paced learning program in undergraduate programs; a total of 27 online courses were recognized by graduate programs.

Developed college-wide required freshman courses that are in keeping with the college's core courses—*Basic Marine Sciences* and *Applied Marine Sciences*—to develop interdisciplinary skills. The college also organized two capstone courses: *Shipboard Operations Practice* and *Capstone Project in Marine Sciences*.

Combined teaching and educational resources to create a co-teaching system for foundation courses; developed 15-18 hours of online courses, including Introduction to Management, Introduction to Economics, Financial statement analysis, Financial Management, and Introduction to Marketing Management.



Adopted an interdisciplinary teaching approach to strengthen the connection between humanities, the arts, and the performing arts, while also incorporating the resources provided by the MOE and the MOST.

> Organized research paper competitions, science activities and experiments, and industrial development courses for students' career development.

133 teams participated in the school's inter-departmental capstone project competition on November 4, 2022.

Interdisciplinary Collaborative Learning Programs

Interdisciplinary Collaborative Learning Programs connected with the SDGs of 2030 Agenda for Sustainable Development of UN

- NSYSU offered 16 different topic-oriented collaborative learning programs in an effort to promote interdisciplinary learning.
- The programs brought instructors from different fields of study together to provide students with 25 integrated courses, and 38 micro integrated courses.
- In 2022, a total of 9,186 students participated in these programs.



Marine Production Model and Circular Economy					
Cross-Cultural Studies and Aesthetics					
Artificial I	E	Expressive Arts and Elder Care			
Fintech	PM2.5	2.5 Aerosols, the Environment, and Life			
OF		Food Safety			
Immersive E	Corpora	Corporate Sustainability and Placemaking			
Smart Citi	nt Transpo	ort	Ecological Sustainability		
Smart I		Local Brand and Social Innovation			
Kaohsiung Studies Civil Soc			ociety ar	nd Democratic Innovation	

The 5th Collaborative Learning Seminar

To showcase the students' achievements over the past year, NSYSU organized the 5th Collaborative Learning Seminar, at NSYSU on Sep. 27 to 29, 2022.

A Hub for Interdisciplinary Collaborative Learning

NSYSU renovated the 10th floor of the Info-Library Building to establish **the Creativity Realization Base**. The space tapped into NSYSU's creative and innovative energy to develop interdisciplinary teams of faculty and students to tackle industrial, social, and international issues.



Adopted a flipped classroom approach in its colleges and has currently developed **70 multifunctional interactive classrooms, 50 Infrastructure improvement, 23 tracking camera,** that allow synchronous online teaching and 7 participation in international web conferences.

Creating a Teaching Support System

Teaching Support System

- NSYSU developed a teaching support system to encourage instructors to adopt innovative teaching approaches.
- In addition to continuing to hold seminars and workshops and adopting microteaching and teaching incentives, NSYSU adopted an in-class peer review system, promoted teacher professional learning community, and provided subsidies for teaching materials, as part of its Higher Education SPROUT Project.
- In 2022, 489 teachers participated in the campus-wide innovative teaching.

Ministry of Education Teaching Practice Research Program

- NSYSU encourages instructors to apply for the Ministry of Education Teaching Practice Research Program and has created a webpage to provide them with new pedagogical knowledge.
- ◆ A total of 30 projects submitted by NSYSU faculty were approved in the 2022 academic year, an approval rate of 69.8%. The projects submitted by NSYSU spanned seven major categories.
- ◆ Starting in 2020, NSYSU was chosen by the Ministry of Education as the southern base for the Teaching Practice Research Program. This demonstrates that with the university's support, the NSYSU faculty is an exemplar in combining education with research. 8

Credit Flexibility to Help Students Develop Autonomous Learning Abilities

Micro-Credits Course

order In to encourage autonomous and flexible learning, the NSYSU Guidelines on Micro *Credits* offers students variety and flexibility in course choices. In the 2021 academic year, 252 students have been recognized with 1micro-credit. In 2022, 1,398 students participated in 62 different micro-courses in various fields of study, providing them with a range of learning options.





Digital Self-Paced Learning

In order to promote autonomous learning, NSYSU launched a digital self-paced learning program. Starting from 2020, NSYSU colleges provide a list of recommended online self-study courses offered by international online learning platforms (e.g., Coursera, edX, FutureLearn, Udacity, Udemy, etc.). In 2022, 277 students earned one elective course credit.



Innovative Degree Paths

NSYSU has adopted several innovative degree paths, including the Undeclared Major Bachelor's Program, Five-Year Bachelor's and Master's Program, Seven-Year Combined Degree Program, and NSYSU Dual Degree Program (available for both Master's and doctoral degrees). These innovative degree paths provide students with a range of learning options.

Establishment of EMI Programs, Investment of EMI Course Resources



- Dept. of Electrical Engineering
- Dept. of MEME
- Dept. of Chemistry

- Dept. of Applied Math
- Dept. of Physics
- Dept. of Márine Biotechnology and Resources
- IBBA Program

- Dept. of Biological Sciences
- Dept. of Materials and Optoelectronic Science
- Dept. of Photonics
- Dept. of Computer Science and Engineering 10



Diversity of English Learn

Curriculum

- Freshmen English courses aligned with CEFR levels, and adopt common syllabus and assessment tools to cultivate listening, speaking, reading, and writing skills
- EMI General Education Honors Program: Option for EMI Program students and English- proficient students
- Practical English Interdisciplinary Program: Integrating EAP and ESP courses, credits counted toward Freshmen English curriculum

Activities

- English Table: Thematic discussions led by international students Monday to Thursday at noon with 3,481 participants
- English Club: Interactive activities guided by off-campus American volunteers with 382 participants
- English Writing and Speaking Studio: Speaking and writing trainings conducted by an international doctoral student with 473 participants
- International Forum: Prompt students critical thinking and analytical skills with 114 participants
- Competition-based activities: English Writing Contest, Speaking Contest, and Si Wan Treasure Hunt

Exam

Arrangement of on-campus TOEIC exam; 27.75% of freshmen reaching CEFR B2

Improving the Accessibility of Higher Education

(I) Expanded Admissions and Guidance Program for Disadvantaged Students

(1) Expanded Admissions Program for Disadvantaged Students

• Admissions Program for Disadvantaged Students

Admissions Program for Disadvantaged Students	Places 2022	Places 2021	Places 2020	Places 2019
The Multi-Star Program	175	170	169	169
The Southern Star Program	69	71	70	68
The Si Wan Southern Star Group Admissions Program	25	23	23	22
The Talent Search Special Admissions Program.	55	55	54	56
The Master of Indigenous Studies in Sociology	20	20	20	20
Total	344	339	336	335

• 2022 NSYSU Open House

To provide equal opportunities for education and achieve social equality, NSYSU organizes student recruitment and invites high school students from Southern Taiwan to participate in.



Improving the Accessibility of Higher Education

(I) Expanded Admissions and Guidance Program for Disadvantaged Students

(2) Comprehensive Economic Assistance Program and Student Development Program

- To help disadvantaged students further their education, NSYSU provides scholarships for students from low-income families as well as student loans, subsidies, on-campus work, financial aid subsidies, and emergency aid subsidies.
- An annual scholarship fund of NT\$100,000 is provided to allow students from middle- to low-income families eliminate their financial concerns so that they can focus on their studies.
- **Overseas programs**: In 2022, five disadvantaged students were approved for subsidies totaling NT\$2.06 million.







Key Performance Reviews of Industry-Academic Collaboration in 2022

Assist newly-built colleges in recognizing industry-university performance:

Help the College of Semiconductor and Advanced Technology Research, the School of Banking and Finance, to recognize the performance of industry-university cooperation, which was NT\$175.6 million and NT\$90.5 million respectively.

Assist in reviewing and negotiating contracts for faculty members:

Professors' industry-academe performance of Colleges of Science, Engineering, Marine Sciences, Liberal Arts, Social Sciences, Si Wan, Semiconductor and Advanced Technology, Research Centers reached about NT\$589.5 million.

Hold matchmaking exchange meetings:

Organize meetings between professors and companies to promote industry-university chances, such as the green hydrogen energy matchmaking meeting for Prof. Chun-Hu Chen.

Actively participate in off-campus exhibitions:

Participate in off-campus industry-university-related activities, such as Academia-Industry Consortium for Southern Science Park. Actively promote industry-university cooperation.











Drive the Startup Trend on Campus Encourage Faculty Members and Students in Startup

Nurture 31 student startup teams.







Cooperate with AIT to develop the entrepreneurship of indigenous people

- **□** Finish 47 entrepreneur trainings of the indigenous and connect over 20 domestic and foreign practitioners.
- Assist 6 teams in getting startup grants for over 1.33 million dollars.











Encourage and Help Faculty with Technology Transfer

Point-of-Care (PoC) test for Multitarget virus detections

- The detection of serious infectious diseases in canines.
- The sensitivity of these reagents should meet international standards.
- Provide the specificity and sensitivity results for the licensed reagents and devices.



Well Terpene Biomedical Co., Ltd. 威特新藥開發股份有限公司



Technology is applied in the agricultural field

- Self-propelled spraying vehicles for spraying operations.
- □ Video recognition spraying systems.
- □ Water lily handheld planters.



Key Performance Reviews of Continuing Education in 2022

Establish Branch of the Continuing Education, NSYSU



Contract negotiating with CHUN SHIN LIMITED

- Object: NSYSU Students & Faculty
- Venue: NSYSU
- Contract signing: Dec. 2022



ETS TOEIC		TOEIC* Tests TO	EIC Bridge* Tests 學習資源	活動一覧 TOE	IC*資訊 團體測驗
TOEIC [®] Listening and	Reading Test				
當崩搜尋條件為 場次狀態:即將舉辦 查找方式:不限					
■ 開放報名中 共3場					
測驗日期	報名期間 追加報名期間	應考資訊查詢	網路查詢成績 成績單預寄日	考區	報名狀態
2022埸次					
10/30	08/24 ~ 09/27 10/11 - 10/22	10/27	11/14 ~ 11/27 11/15	基隆 臺北 桃園 新竹 臺中 雲林 臺南 高雄 嘉義 臺東	追加報名
11/13	09/07 - 10/11 10/25 - 11/05	11/10	11/28 ~ 12/11 11/29	臺北 桃園 新竹 臺中 臺南 高雄	立即報名
11/27	09/21 - 10/25 11/08 ~ 11/19	11/24	12/12 ~ 12/25 12/13	臺北 桃園 新竹 臺中 彰化 雲林 臺南 高雄 嘉義 屏東 宜蘭 花薤	立即報名

The Multiplelanguage Learning Program

- Cooperate with International Affairs Office.
- Open 7 languages, like Japanese, Korean, German, Spanish, Vietnamese, Thai, Vietnamese, Indonesian.
- Subsidize our students
 & staffs.
- From 2020-2022, 43
 classes were set up, 691
 people were trained. 18

Center for Austronesia Social and Cultural Development

Diversified study channels for indigenous culture study

Students can access and study indigenous culture through diverse learning channels at the school.



Attending Academic Conference and Lecture Course, Micro Credits Course & Extracurricular learning

Master of Indigenous Studies in Sociology Field trip to Indigenous Community

Center for Austronesia Social and Cultural Development

Conveying the various aspects of culture in class and activities

We continue to provide varied courses and extra-curricular learning for students, allowing everyone to learn about indigenous culture through different perspectives.



Goals and Strategies

Promote the benchmarking project, "Global Sinology Forum at NSYSU," of The Ministry of Education, to highlight the potential of NSYSU and Taiwan as a Global Sinology Forum. In order to encourage interdepartmental and interdisciplinary collaboration among teachers, the process of exchange between different professions will stimulate more possibilities and develop a broader academic and teaching perspective.

We support the development of departmental highlights, integrating academic expertise and practice, and organising special activities to stimulate students' desire to connect with the world and learn independently.

To understand Taiwan's position as a hub in East Asia, its connections and differences with other cultures in various aspects, and to further explore the possibilities of academic exchanges and teaching collaborations in order to deepen concrete cross-cultural and cross-disciplinary practices.

Goals and Strategies

Implementing the benchmarking project, "Global Sinology Forum at NSYSU," of The Ministry of Education, to build an international platform for Chinese studies at NSYSU.

Specific Strategies Encouraging departments to develop distinctive activities that integrate academic expertise and practice, and to present their learning and reflections in concrete outcomes.

Organising various academic exchange workshops with crosscultural and cross-disciplinary themes. Promoting the spirit of Taiwanese culture, arts and humanities, for the purpose of enhancing the international visibility of NSYSU..

Goals and Strategies: Implementing the benchmarking project, "Global Sinology Forum at NSYSU," of The Ministry of Education, to build an international platform for Chinese studies at NSYSU.



Goals and Strategies: Encourage departments to develop distinctive activities that integrate academic expertise and practice, and to present their learning and reflections in concrete outcomes.



24

Goals and Strategies: Encourage departments to develop distinctive activities that integrate academic expertise and practice, and to present their learning and reflections in concrete outcomes.



Grand English Drama

Music Performance

Annual Performance of 25 the Department of Theatre Arts

Goals and Strategies: Organising various academic exchange workshops with cross-cultural and crossdisciplinary themes. Promoting the spirit of Taiwanese culture, arts and humanities, and to enhance the international visibility of NSYSU.



Cross-Disciplinary Dialogue: A cross-tribunal event

Effectiveness & Change

Teaching Side

By adding practical activities to the theory, students experience the depth and breadth of Taiwan and the humanities, and collaborate their learning and reflections in exhibitions, literary prizes, publications and academic conferences.

Research Side

The number of teachers actively involved in cross-disciplinary collaboration has been increasing year by year through the exchange of various workshops and the Salon of Liberal and Arts series and the implementation of the benchmarking project, "Global Sinology Forum at NSYSU," of The Ministry of Education, to achieve concrete internationalization.

Assessment & Refinement

Teaching Side

The expansion and accumulation of the humanities and arts professions has taken time, from experimentation, experience, revision and improvement to steady development. Over the years, we have gradually built up an operational model, leading students to apply what they have learnt through performances, exhibitions and practical community activities.

Research Side

We have been able to take advantage of Taiwan's location in the intertidal zone of culture and history where East meets West to share and collaborate resources across institutions, to internationalism the programmed through an international Chinese studies platform with humanistic characteristics.

Center for Green-Energy Key Materials Research

- To focus on hydrogen generation, biomass/biofuel, high-value technology, lithium-ion batteries, and catalysts.
- To develop large energy storage technology: as redox flow batteries.
- We have cooperated with private companies and have industry-academia cooperation projects.

Highlights

- A vehicle with high-voltage LTO batteries.
- Patents about new anodes, cathodes, and highvoltage electrolytes.



redox flow battery

Biomimicry Research Center

Learning from Nature is the Essence of Biomimicry

This recombination science integrates life, information, engineering and system science, which develops biomimetic machinery, biomimetic materials and biomimetic photoelectric energy from biology.

Research Team

The team integrates 20 researchers from Biology, Chemistry, Mechanical and Electrical Engineering, Optoelectronic Engineering, Materials and Optoelectronic Science, Marine Biotechnology, and Marine Environment and Engineering.

In 2022, we publish more than 30 high-quality papers, 9 funded projects, and 2 technology transfers.



Photosystem Energy Harvesting Technology

Biomimicry Research Center

Research Results and Future Applications

Biomimetic Approaches by Bacteria to Treat Tumor Mechanism



Biomimetics Machine



Pesticide spraying UAV





Wearable labor-saving clothing



Degree of leaf aging

Degree of oxidative stress

Control

Ethylene

Light Harvesting Antenna Adjustment Mechanism



Control



Application in Drought Tolerance breeding

SPDSS1





Salt







Medical Imaging Research Group

Integrating the biomedical research capacity of Colleges of Engineering and Science, we focus our effort on the following topics:

Automatic Tongue Diagnostic System



Precision Traditional Chinese Medicine

Advanced Medical Imaging



Physiological signal detection system: Applications in MRI & PET





Brain-Computer interface





LEGO-like EEG headset (TW team)

Medical Imaging Research Group





Interdisciplinary Collaboration







International Collaboration



College of Management –Office of Career Development

Career Consulting and Employment Preparation

		Career Seminar	Hult Prize Club	Career Consultation / Resume Screening
Activity sessions	3	25	6	177
business partners	3	83	8	29
Number of participating	33	1,053	323	177









9.29 2022, AIT: Sharing across cultures 10.05 2022, The Way to University: Impact Investing

11.23 2022, Enterprise Recruitment Seminar 12.07 2022, Fubon Talent Cultivation Plan 12.09 2022, 34 Overseas job hunting in English

College of Management –Office of Career Development

Action Learning Cooperation

With the aim of encouraging our students to apply their professional knowledge in the workplace and cultivating talents with both academic and practical experience to enhance the interaction with enterprises, the College has drawn up the "Regulation Governing the Subsidy for Promoting Departmental Career Development Activities" in order to encourage our faculty members to incorporate the concept of Action Learning into their courses.

academic year	Number of related courses	number of students	Number of cooperative enterprises
109	15	312	53
110	14	343	48
111	3	129	16



Corporate Visit : Kaohsiung Veterans General Hospital Workshop: Sugar factory Community in Qishan Corporate Visit : Local Restaurants Design Thinking Workshop : Fitness Factory Final Presentation: 35 Kaohsiung Main Public Library

Globalization Achievements : Cooperation agreements with academic institutions abroad

The cooperation agreements reached in 2022:



December 2021 We reached a MOU and exchange agreement with the College of Social Sciences of University of Tartu,Estonia.



March 2022 Our Department of Sociology reached joint a MOU and exchange agreement with Ryukoku University, Japan.



September 2022 We reached a MOU and exchange agreement with the Faculty of Social Sciences ,Charles University .

The achievement of our research center

Preparing for the establishment of an international journal

- The international journal organized by Sun Yat-Sen Center for Social Sciences: "Innovation in the Social Sciences (ISS)", has negotiated with the Dutch Brill Publishing Group in the first half of 2022 on specific publishing and other matters, and determined the journal cover and other settings.
- Sun Yat-Sen Center for Social Sciences has held an international symposium (Social Innovation: Global Challenges and Opportunities) in July 2022. The symposium received a total of 17 papers and a total of 200 participants.



Innovation in the Social Sciences addresses realworld social problems (climate change, the pandemic and its impact, right-wing populism, political polarization, global inequality, population aging, democratic governance) with innovative perspectives

M @BRILL_SOCIAL

BRILL.COM/ISS

Social Innovation Conference 2022/07:89-31



Si Wan College Highlights

micro-credit workshops & dorm collaborative learning

We hope to create an environment of self-regulated and interdisciplinary learning and meanwhile to balance liberal arts and social sciences learning among students.



Aims to promote interdisciplinary learning and teaching innovation, and to deepen the understanding and awareness of the diversity of Taiwanese cultures.



Activity results

- ◆ Off-campus Series Workshops : Three towns with Three themes in 2022.
- College students and children interact with English picture books, creating a bilingual learning environment.
- Through remote teaching in rural areas, go beyond Kaohsiung and expand to remote rural schools such as Taoyuan, Hualien, and Taitung.
- Experiences and Insight Sharing from Masters of Industries.





Hand-crafted playground equipment from recycled wooden pallets donated kindergartens as Christmas gifts.



Circular Economy for a net zero transition.



Invited V.P. of Delta Elec. to share

how they implement ESG in

corporate social responsibility

Invited the writers Chen, Shih-hung and Stephan Thome to deliver speeches.



04

Maritime sports education: learning from the sea and incorporating marine elements into physical education. - Sports literacy-oriented workouts in physical education at sea.



Taiwan and Sri Lanka Environmental Change Sciences and Technology Innovation Center

Research



Molecular domestication and conservation strategies for native Citrus species and its relatives from Sri Lanka and Taiwan



Genetic connectivity of marine organisms and in Sri Lanka: blue swimming crab



Eutrophication, Hypoxia, Ocean acidification and Blue carbon (seagrass and mangroves) in the western (Negombo lagoon) and southern (Rekawa lagoon) coast of Sri Lanka

Microplastic identification seasonal Small edible marine and freshwater fish in Sri Lankan water

Workshop

Bilateral workshop of Taiwan and Sri Lanka Environmental Change Sciences and Technology Innovation Center (29th Nov, 2022)



Promotion of Marine Education and Fisheries

Marine Education



Organized high school research activities, including marine characteristic homogenization courses, marine biology and marine geology experience camps, middle school seed teacher training workshops, etc., with about 400 participants.

> Fisheries



Cooperated with the Kaohsiung City Animal Protection Office to publish the special book "Prevention and Control of Common Aquaculture Infectious Diseases in Kaohsiung City", and held educational workshops to let fishermen know more about infectious diseases. 41

Ocean Acidification, Deoxygenation and Freshening Research Center

New Mechanism: Warming enhances deep ocean acidification and deoxygenation Ventilation reduced under warming



Deep water stagnated, accumulating more effects (O2 and pH decrease) due to organic matter decomposition.



Future declines in subsurface pH (Figure 3.6) will be modulated by changes in ocean overturning and water-mass subduction (Resplandy et al., 2013), and in organic matter remineralisation (Chen et al., 2017). In particular, decreases in pH will be less consistent at the seafloor than

Future Research: To investigate the degree of influence of warming on the open oceans and the marginal seas around Taiwan

50-year time series data in the Sea of Japan



Chen et al., 2017. Deep oceans may acidify faster than anticipated due to global warming, *Nature Climate Change*, 7: 890-894.

Ocean Acidification, Deoxygenation and Freshening Research Center

Tiger shrimp affected by OA are not delicious due to amino acid reduction



Future Research:

- Can shrimp survive under a long-term ocean acidification?
- Can shrimp have offspring in an OA environment?
- Effects of OA on the survival rate of shrimp larvae.

Mass mortality of intertidal benthos after a prolonged heavy rainfall in Liuqiu Island



Future Research:

- Effects of climate change on intertidal coral reefs
- Tolerance and adaptation of benthic organisms in changing environments

Underwater Vehicle R&D Center



International Communication Research Group

Leading Mobile Antenna and Radar Sensing Tech

- Leading in terminal multi-antenna system and radar sensing technology; more than NT\$490 million in external resources in the past five years
- Principal Investigators for 6G Prospective Academic Research and Development Projects
- Construct the world's only 6G Upper-mid-band Higher-order (8+) MIMO test platform



Selected Awards

• Prof. K.-L. Wong is included in 2022 Research.com ranking of the world's top scientists in the field of EE Eng.



Chair Prof. K.-L. Wong Ranked 99th in World, 1st in Taiwan The OLNY domestic scholar entered Top 100 in the world



- Prof. T.-S. Horng's team won the 18th National Innovation Award – Creative Epidemic Prevention Tech. Category (2021)
- Prof. C.-P. Li won the 2020 Outstanding Research Award of MOST (2020)
- Prof. F.-K. Wang won the Mr. Wu Dayou Memorial Award from MOST (2021)
- Prof. C.-K. Wen was selected as the 2022 Highly Cited Researcher by Clarivate (2022)
 45

International Communication Research Group

NSYSU

Approaching Benchmark

• Benchmark: Telecommunications Group, University of Southampton (Soton), Ranked 77th in 2022 QS

EE FWCI 5-Year Avg./2019 : NSYSU 2.06/1.96 Approaching Soton 2.89/3.65

Q1 Journal



Joint 6G Research with Int. Top Univ.

- Jointly develop 6G key tech. with Imperial College London and University College London
- Host 2022 Taiwan-UK Bilateral Exchange Webinar – Spectrum Sharing Using AI in 6G

Strengthen Industrial Links,

Cultivate Future Talents

- Assist local enterprises (ASE, CSC, etc.) in cultivating 5G and AI talents
- Prof. K.-L. Wong in 2020-2022 served as the jury convener of the "Communication Antenna **Design Competition**" sponsored by the MOEA to Taiwan's cultivate talents for antenna communication industry 46

Business Analytics Platform Research Highlights

Strategic Human Capital

Current research outputs:

- Until November, we have published 10 papers on SSCI-listed journals (including one on FT 50 listed journal, four on NSTC recommended journals), 2 papers on TSSCI-listed journals.
- Two PhD students have published papers on top-tier management journals (AMJ and JMS).
- Prof. Pao-Lien Chen was appointed as the Convener of the discipline of Management of NSTC (國科會管理 學門召集人)
- The research team has collaborated with 15 different companies initiate practices of HR Analytics. On-going progress:
- Applying for the Research Center of SHC (proposal submitted).
- Two PhD students have received the fundings of NSTC Overseas Project (國科會千里馬計畫)



Business Analytics Platform Research Highlights

Business Intelligence and Analytics

Results :

As of November 2022, seventeen papers have been published or accepted, including one accepted by top 10 information systems journal and one published in top AI journal. We hosted two conferences. Ongoing work :

- Human-Centered Artificial Intelligence(HAI) : We are collecting dada for the research model that examines the impact of information technology (IT) employees' IT obsolescence on coping behaviors.
- We have developed a mechanism to measure the gap between AI education and employment. Relevant data will be collected through survey in 2023.



11.18 2022, International Conference on Service Science and Innovation



