

NTU Handbook 2019 - 2020

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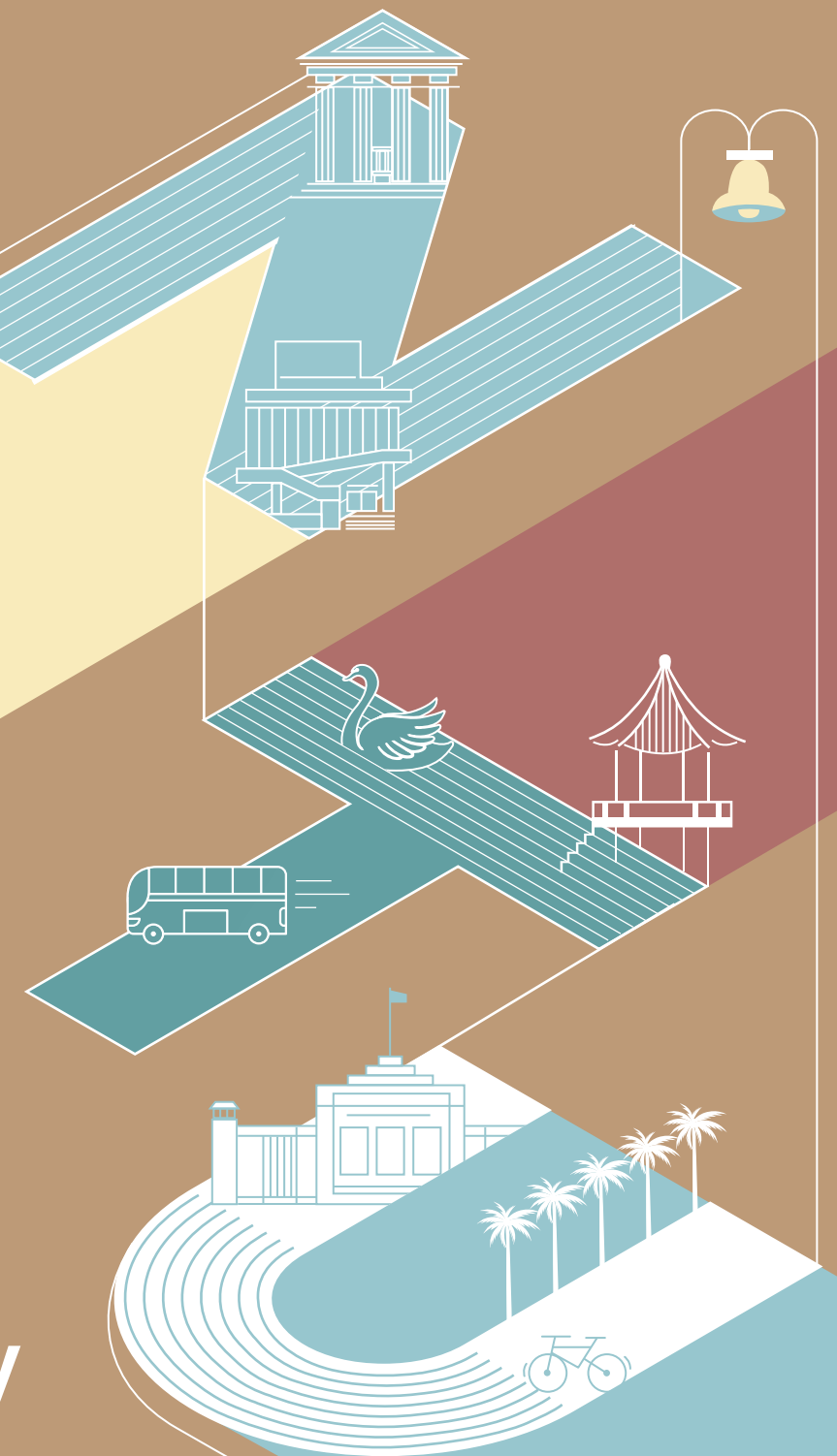
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# National Taiwan University

2019 — 2020  
NTU HANDBOOK



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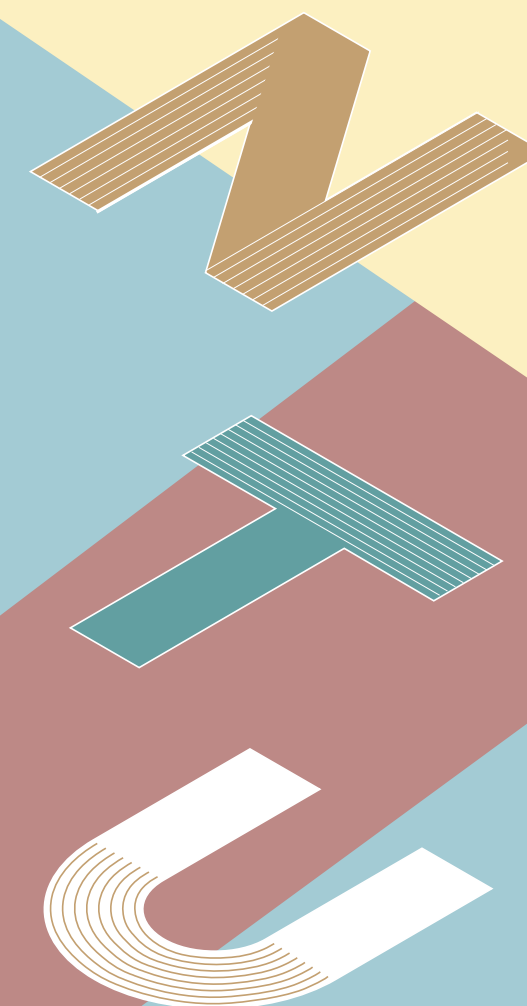
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# Message from the President



The beauty of NTU lies in its interwoven natural and human landscapes, its academic quest for truth, and its conscientious concern for the society. Since its establishment, NTU has been the leader of higher education in Taiwan and has faced and tackled a variety of challenges on the path toward excellence. Prevailing adaptability and resilient tenacity have refined our esteemed institute to be steadfastly eminent and estimable.

However, NTU must preemptively address the myriad of challenges that have arisen in recent years, such as recruitments of talents, pedagogical reforms, innovations in research, and competitions for worldwide standings. To hone NTU's competitive edge in research and education, and to avoid unpredictable marginalization in the global arena, we are committed to the following: enacting comprehensive internationalization, elevating research and development capacity, establishing unimpeded enrollment venues for the underprivileged, and effectuating innovations in both learning and teaching. With these efforts, we aim to make strides and bring the prestige of NTU to a new height at the university's centennial in 2028.

In light of comprehensive internationalization, we broaden and deepen NTU's global connections, foster dual- (multi-) degree programs based on international collaboration, and strengthen our ties and research

cooperation with partner universities around the world. We endeavor to keep NTU's research and education in sync with global pioneers and establish NTU as an international hub of research and development. Moreover, to broaden NTU students' horizons, we provide a wide range of scholarships encouraging students to take part in exchange activities abroad, furthering their international awareness and competitiveness.

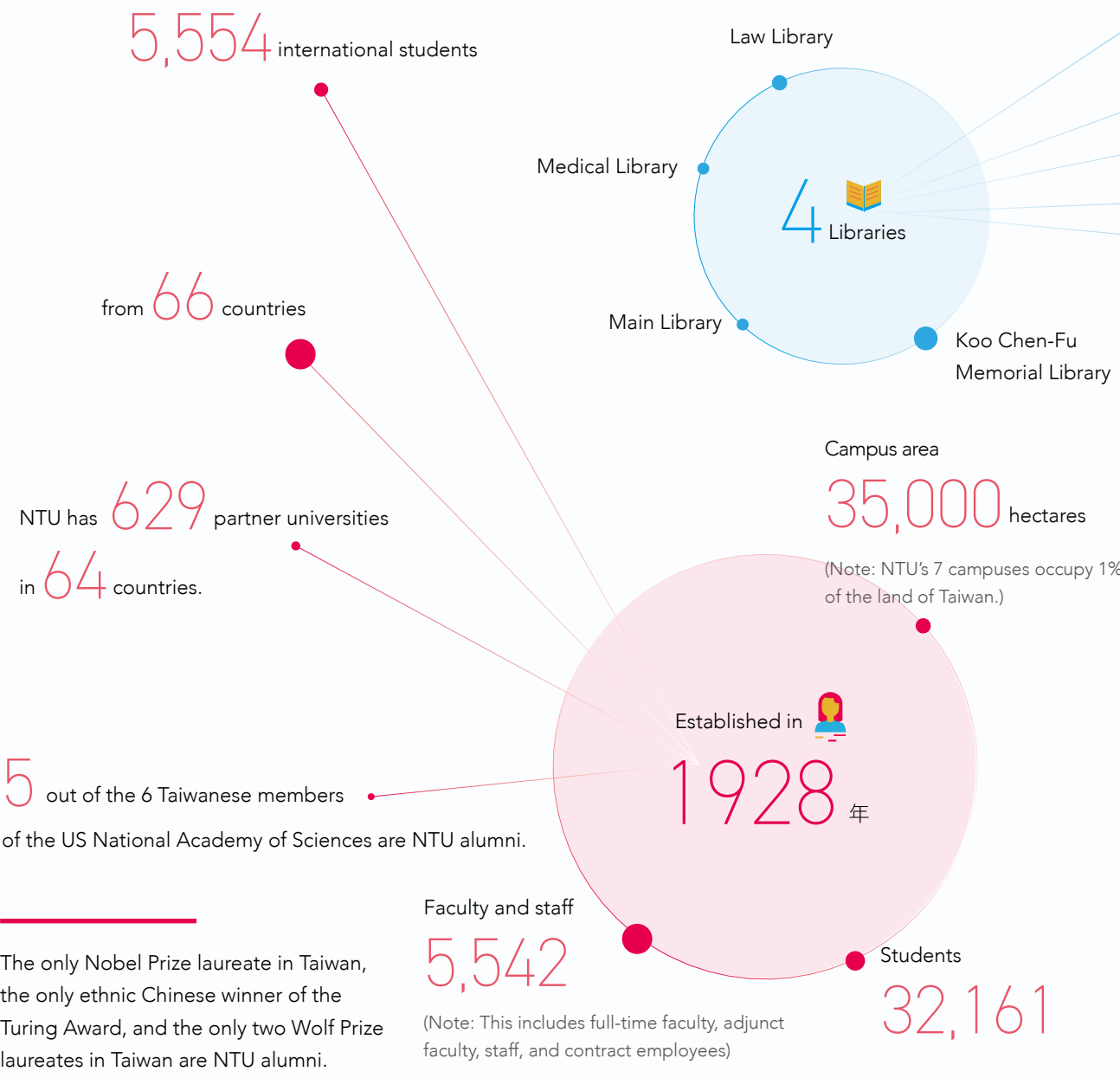
To advance NTU's research and development capacity, we continue to improve the environment on campus in various aspects, including housing, salaries, research support, and teaching support. By offering sufficient support, NTU enables faculty to focus on the pursuit of knowledge and truth, which will in turn maintain NTU's efficacy and enterprise in various fields. To offset fierce international recruitment competitions, we are copiously incentivizing scholars from home and abroad to develop their career in research and pedagogy at NTU.

To foster universality and equality in higher education, we plan to double the number of underprivileged students admitted via the Hope Admission Program in two years and triple that number in four. In addition to making NTU accessible to more and more economically disadvantaged students, our fundamental goal is to propel them up the proverbial social ladder through education. To enhance NTU viability in the current socio-political climate, we also provide a wide array of scholarships and grants to attract local and international outstanding high school students to study at NTU.

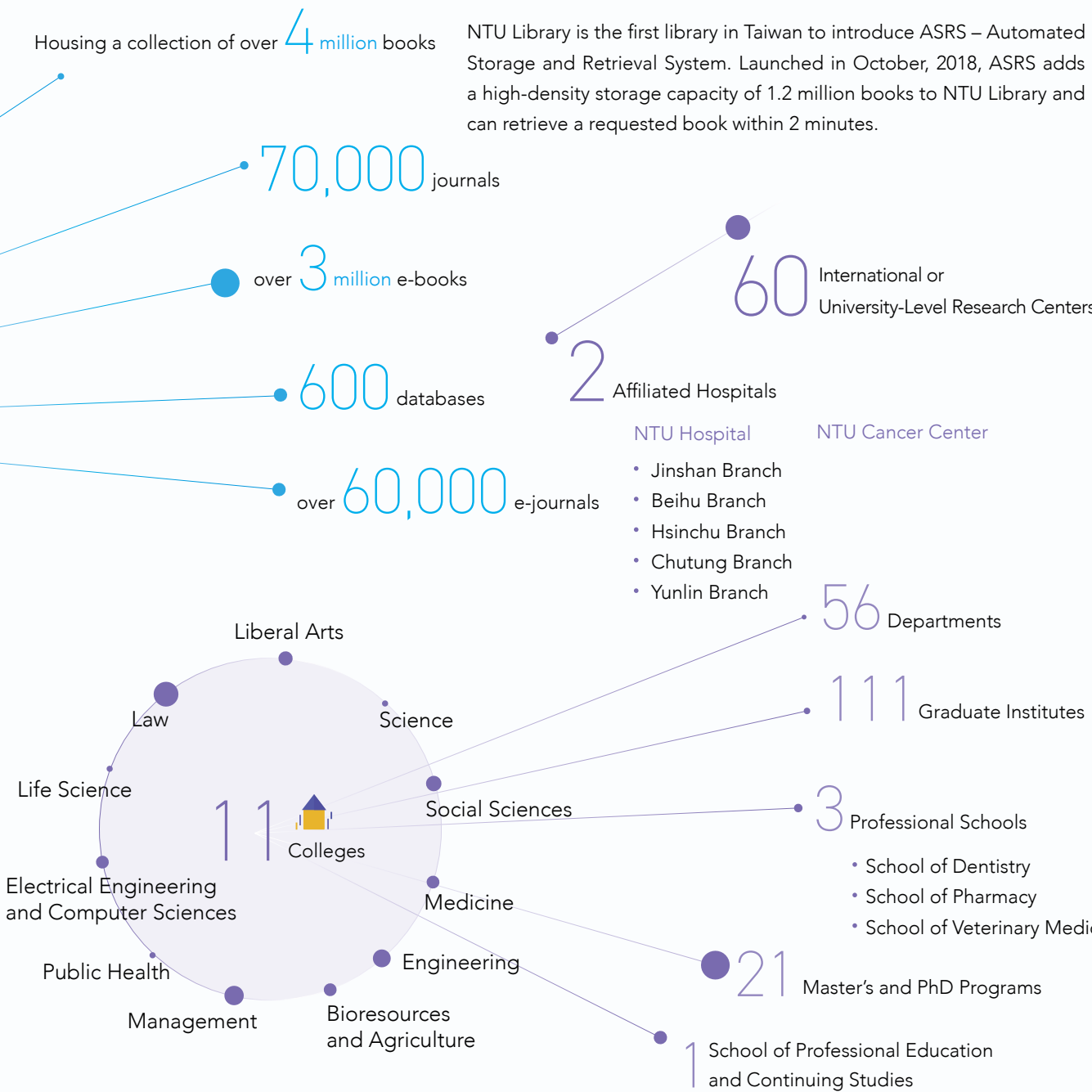
To address the drastic changes surrounding higher education, NTU continues to innovate teaching and learning – optimizing its teaching system and environment, facilitating digitized learning, advancing professional programs, and encouraging interdisciplinary education to nurture future talents capable of inter-dimensional reasoning. As technology evolves at an exponential rate, the medium of knowledge transmission and the type of talents demanded by modern society have also undergone disruptive changes. To keep abreast with the times, we are prepared to reexamine the core issues of higher education and explore and fulfill the varied potential prospects of a university as a guiding social and academic institute of the 21<sup>st</sup> century.

Kazuo Ishiguro, laureate of the 2017 Nobel Prize in Literature, said in his Nobel lecture, "It's hard to put the whole world to rights, but let us at least think about how we can prepare our own small corner of it." I believe that small improvements will culminate into a perpetual momentum that launches an ever-evolving NTU across its next glorious centennial.

# DATA NTU



The only Nobel Prize laureate in Taiwan, the only ethnic Chinese winner of the Turing Award, and the only two Wolf Prize laureates in Taiwan are NTU alumni.



- Trivia Facts about NTU**
- NTU Dairy Farm produces 600 kg of milk every day, always sold out and much sought after.
  - The Royal Palm Boulevard is lined with a total of 201 royal palms.
  - There are 25,000 bikes on campus.
  - The Fu Bell strikes 21 times at the beginning and end of class.

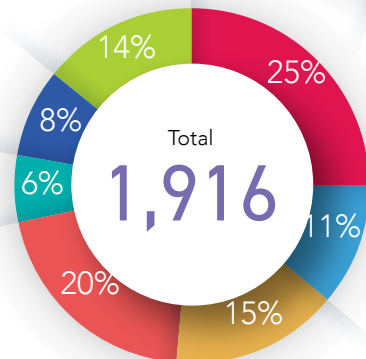
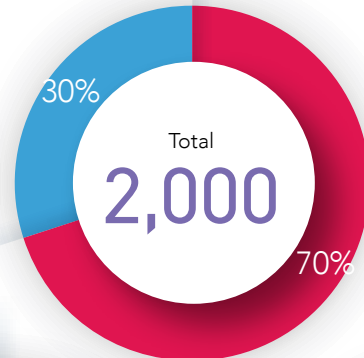
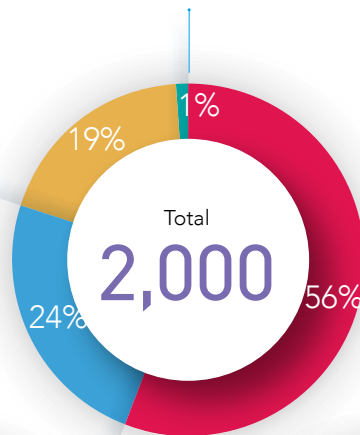


## Faculty

• Professors	1,117
• Associate Professors	487
• Assistant Professors	377
• Lecturers	19
Total	2,000

## Faculty by Gender

• Male	1,403
• Female	597
Total	2,000



## Adjunct Faculty

• Professors	485
• Associate Professors	208
• Assistant Professors	284
• Lecturers	384
• Specialists and Teachers	121
• Research Fellows	157
• Clinical Teachers	277
Total	1,916

## Staff

• Full-time staff (including rare technicians)	595
• Contract employees	947
Total	1,542

## Enrollment by Gender

• PhDs (Male)	2,433
• PhDs (Female)	1,054
• Masters (Male)	7,263
• Masters (Female)	4,778
• Bachelors (Male)	9,441
• Bachelors (Female)	7,192
Total	32,161

(Data as of September 30, 2019)

## Global NTU

NTU has...

- 5,554 international students from 66 countries
- 629 partner universities in 64 countries
- 671 student exchange programs with 49 countries

(Note: Degree and short-term exchange students included)



## Learning on Campus

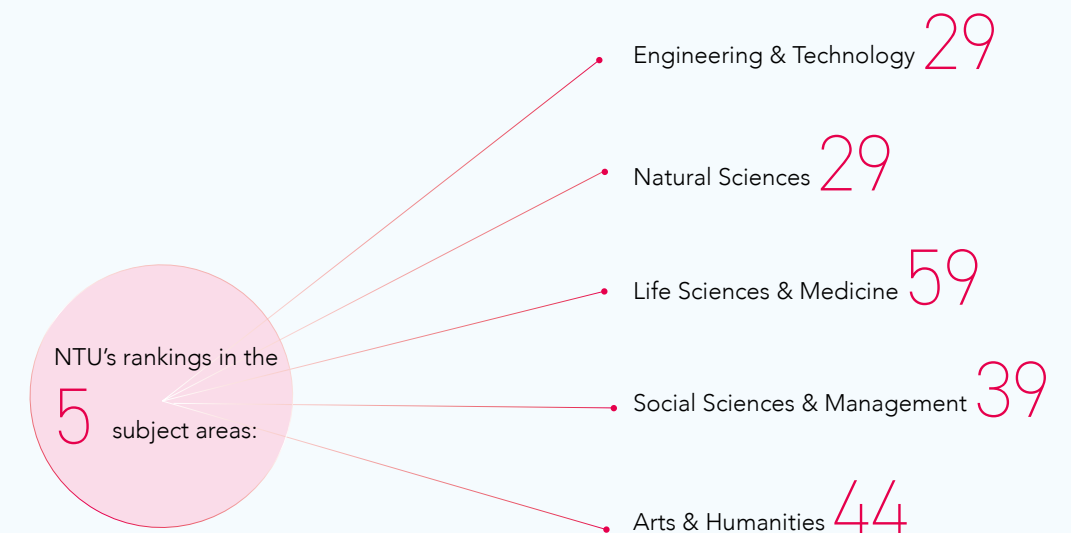
NTU MOOC has more than 930,000 enrollments and over 23,000 course completions.

NTU OCW offers 227 online courses and has accumulated 15,000,000 clicks.

The Hope Scholarship grants an amount of NTD 60,000-100,000 to local underprivileged freshmen in the first year, and recipients whose grades rank in the top 30% of their departments may continue to receive the scholarship from the 2<sup>nd</sup> year of study to graduation.

## Top Research

NTU is ranked among the world's top 50 in 15 subjects in the QS World University Rankings by Subject.



# MILESTONES

National Taiwan University's predecessor, Taihoku Imperial University (TIU), was founded by the Japanese government in 1928. Following the nationalist government's victory over Japan in the Second Sino-Japanese War in 1945 and Taiwan's retrocession, the ROC government took over the school, which was reestablished as National Taiwan University (NTU).

The university's roots, however, go further back to 1895, when the Japanese instituted Taiwan Hospital, the precursor of the NTU Hospital, located in Dadaocheng, Taipei.

1895

June 18: Taiwan Hospital becomes operational.



1928

March 17: TIU is founded. Being established on the campus that formerly belonged to Taihoku College of Agriculture and Forestry, TIU initially houses the Faculty of Literature & Politics, the Faculty of Science & Agriculture, the affiliated Technical College of Agriculture and Forestry (which is reinstituted as Taichung Senior School of Agriculture and Forestry in 1943), and a library. Dr. Taira Shidehara is appointed the first president of TIU.



1936

The Faculty of Medicine and the Medical College are established.



1937

July: Forests in Central Taiwan's mountainous region are acquired for highland farming experiments (Highland Experimental Farm, an affiliated organization of the College of Agriculture, is established in 1961).

1963

The Center of Electronic Computing (which is renamed "Computer and Information Networking Center" in 1995) is established.

1982

November: The university emblem is unveiled at the anniversary celebration.



1986

Noted NTU alumnus, Dr. Yuan-Tseh Lee, is awarded the Nobel Prize in Chemistry.

1987

August: The College of Management is established.

1988

March: The Student Representatives Federation is renamed "the Student Association" (with a president directly elected by the entire student body).

2002

August: The College of Agriculture is renamed the College of Bioresources and Agriculture.

2003

August: The College of Life Science is established.

2007

August: The Offices of Research and Development, International Affairs, and Financial Affairs are established.

November: The NTU Museums Group is established.

2008

August: The Schools of Dentistry and Veterinary Medicine and the Center for the Arts are established.

2009

October: NTU ranks 95<sup>th</sup> in the "Times Higher Education World University Rankings," marking the school's first entry into the Top 100.

1938

The university's affiliated hospital is established.



1941

July: The Preparatory Division is established.

1943

March: The Faculty of Science & Agriculture is divided into two separate faculties: the Faculty of Science and the Faculty of Agriculture.  
May: The Faculty of Engineering is established.

1945

November 15: Per the decree of the Executive Yuan, TIU is reestablished as National Taiwan University (NTU) with Tsung-Lo Lo as the first president.

The university, including an affiliated hospital and ranch, comprises six colleges: Liberal Arts, Science, Law, Medicine, Engineering, and Agriculture. Other administrative divisions include the Offices of Academic Affairs, General Affairs, and Disciplinary Affairs (The Office of Disciplinary Affairs is renamed "the Office of Student Affairs" in 1994).



1947

January: The Provincial College of Law and Commerce (originally Taihoku College of Commerce) is annexed into NTU. The annexation includes the college campus and buildings on Xuzhou Road.



1949

January: Ssu-Nien Fu takes on the mantle of the university's fourth president. (The Fu Bell and Fu Garden are later built to commemorate him)

May: The First Demonstrative Tree Farm is handed over to NTU by the provincial government, and renamed the Experimental Forest Office under the College of Agriculture the following year.



1993

May: NTU becomes the first university in Taiwan to elect its own president. Mr. Wei-Jao Chen is nominated accordingly. He takes office in June as the school's 9th chief president.

August: The College of Public Health is established.

1996

October: The University Press is established.

1997

March: NTU celebrates its first Azalea Festival.

August: The College of Electrical Engineering (which is renamed "the College of Electrical Engineering and Computer Science" in 2000) is established.

1999

August: The new College of Law is established. Departments formerly under the College of Law are annexed accordingly into the College of Social Sciences.

2000

May: The Chupei Campus is established.

June: The Shuiyuan Campus is established after the relocation of the National Defense Medical Center.

October: The Yunlin Campus Planning Committee is established.

2013

August: The School of Pharmacy is established.

2016

March: The Ministry of Education approves the establishment of the NTU System, which comprises NTU, National Taiwan Normal University (NTNU), and National Taiwan University of Science and Technology (NTUST).



國立臺灣大學系統

2017

August: The Center for Continuing Education is reinstituted as the School of Professional Education and Continuing Studies (SPECS).

2018

June: NTU hosts the 2018 APRU Annual Presidents' Meeting.

October: NTU Library becomes the first library in Taiwan to introduce the Automated Storage and Retrieval System (ASRS), and subsequently establishes the ASRS Service Center.

November: NTU celebrates its 90<sup>th</sup> anniversary.

December: Sponsored by YongLin Healthcare Foundation, NTU Cancer Center is inaugurated.

2019

January 8: Dr. Chung-Ming Kuan takes office as the 12<sup>th</sup> president of NTU.



# Learning on Campus



NTU has established **36** credit programs



**6** special second field programs

and offers **7** joint courses every semester



## Teaching Excellence

### Cross-Disciplinary Learning & Elite Talent Development

The rise of newly emerging research fields necessitates breaking existing disciplinary boundaries and building a learning environment suitable for developing cross-disciplinary expertise. As a leading university both in Taiwan and abroad, NTU offers a wide range of cross-disciplinary credit programs and special second field programs. We promote collaboration across colleges and departments, encouraging faculty members of different disciplines to offer joint courses and provide students with diverse learning experiences on campus. NTU has established 36 credit programs and six special second field programs, and we offer seven joint courses every semester. By combining different subjects and disciplines, we aim to nurture excellent talents who are not only highly creative and adaptable, but are also coveted by each industry to meet practical demands and conduct cutting-edge research.

### Blended Learning Boosts Learning Outcomes

NTU prides itself for having developed several digital teaching and learning platforms that feature diverse functionalities. With the help of these platforms, our teachers apply digital and media technologies to innovate their course materials and teaching models. NTU COOL, short for NTU COurses OnLine, is the latest digital teaching and learning platform developed by the university. It features blended learning, online interactive discussion, and archived students' digital learning records, helping students to evaluate their own progression. In the future, visual models of the students' learning process will include timelines to show learning behavior in terms of time, category, and intensity. Applicable to all subjects and disciplines, NTU COOL helps students develop individual learning styles, enriches the overall course content, and boosts learning effectiveness.







Coursera

## Online Credit Courses Support Diverse, Flexible Learning

To promote online learning, NTU introduced a credit policy for massive open online courses (MOOCs), allowing students attending online courses to acquire credits once they pass evaluations in the form of a real-world exam or a final paper. Since joining Coursera, an international online course platform, in 2013, NTU MOOC has offered 56 courses on the platform, attracted over 900,000 cumulative enrollments, and provided students with access to flexible and diverse curricula and cross-disciplinary learning opportunities. NTU will continue developing MOOCs taught in English that are characterized by our research strengths and cultural features. Moreover, to shoulder NTU's social responsibility, we will introduce these open courses to high school students and schools in remote areas, so as to expand our entire society's accessibility to higher education resources.

NTU MOOC  
has...



• attracted over **90,000** enrollments

• and offered **56** courses

## E-Classrooms Provide Innovative Learning Spaces

Optimizing the learning and teaching environments on campus is one of NTU's central goals. The classrooms for required common courses, service-based courses, and general education courses were designed using the latest technologies and energy-saving methods. For example, both the Liberal Education Classroom Building (opened in 2011) and the Multi-Purpose Classroom Building (opened in 2018) are green edifices equipped with electronic classrooms and autonomous learning spaces. The former houses classrooms of different sizes that are designed for lecture and seminar courses. The latter is equipped with a lecture recording system that enables previews and reviews of class material outside of the classroom. Presently, the five main classroom buildings on campus accommodate 125 classrooms with a total capacity of 10,416 students. Each building is equipped with a central control room to provide electronic services and enhance the overall learning and teaching quality.



Spaces for common general education courses

• **5** classroom buildings

• **125** classrooms

• Total capacity: **10,416** students







## Liberal Education Classroom Building

(new building, e-classrooms included)



## Common Subjects Classroom Building

(remodeled into an e-classroom building)



## Freshman Classroom Building

(remodeled into an e-classroom building)



## Multi-Purpose Classroom Building

(new building, e-classrooms included)





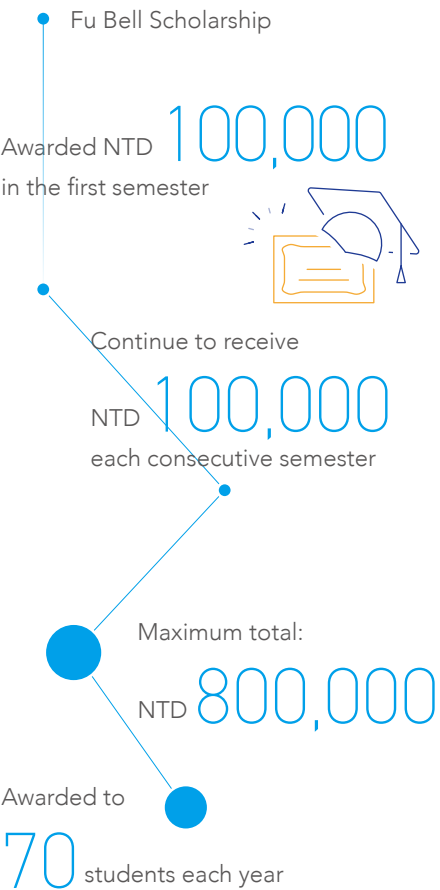
New Scholarship Established to Attract Talented Students

To attract outstanding students, NTU established the Fu Bell Scholarship in 2019 as an incentive to encourage colleges and departments to recruit local high school students who have shown excellent academic performance, received awards at important international contests, or demonstrated other outstanding achievements. Recipients are awarded a scholarship of NTD 100,000 in the first semester. Those who show excellent academic performance while studying at NTU would continue to receive NTD 100,000 each consecutive semester, up to a maximum of NTD 800,000. This scholarship is awarded to approximately 70 students each year. Besides offering local scholarships, NTU actively participates in international student recruitment fairs and organizes information sessions at overseas elite high schools to attract outstanding students from abroad.

For potential students in need of financial support, NTU is allocating additional resources and creating new admissions channels in an effort to assist more and more underprivileged students. Besides the existing Hope Admission Program, we will create an additional “Hope Category” in the individual application channel to increase the number of local underprivileged students admitted, as well as subsidize their examination fees. To motivate underprivileged students with potential to aim for NTU for further studies, we recently established the more financially viable Hope Scholarship on top of the existing Hope Stipends. With these resources, NTU aims to lend financial support to more students in need, while providing learning and counseling services on campus to ensure that underprivileged students are properly and comprehensively cared for after enrollment.



2019 NTU World Carnival Festival



Bravo Campus

A Journey of Marvel and Fulfillment

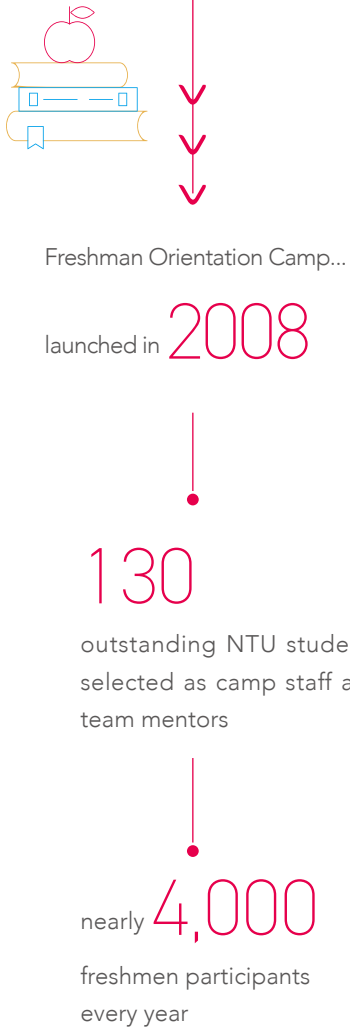
Launched in 2008, the NTU Freshman Orientation Camp is an event involving a variety of activities customized to greet and prepare incoming students for study and life at NTU.

Every year, nearly 4,000 freshmen are divided into two batches to attend this event during August and September. Moreover, approximately 130 outstanding NTU students are selected to serve as staff members and team mentors, guiding the freshmen through courses and activities during the camp. This event is designed to help students develop an appropriate learning attitude and transition smoothly from high school to college. Besides providing a fruitful learning experience, the camp also familiarizes incoming students with important resources on campus, encourages peer interaction, and creates an amicable environment for students to efficiently and effortlessly adapt to college life at NTU.

Undiminished Enthusiasm on Campus

Currently, there are over 400 active student clubs on campus. Among them are service clubs that lend a helping hand to people in need in every corner of the society, fitness clubs that fill the campus with high cheer and spirit, and academic and artistic clubs that cultivate students’ aesthetic tastes and temperaments. The Azalea Festival and Student Club Expo held annually in March fully embody NTU’s spirits of cooperation and diversity. Campus life at NTU is colorful and thriving with a wide array of student activities every day. For example, student banquets held during the graduation season, world carnival festivals for local and international students, and exploration camps cloaked in mystery and excitement make the campus sparkle with enduring and endearing enthusiasm.

The activities autonomously organized by NTU students provide them with more opportunities to network and interact with the international community. For instance, the annual Global Initiative Symposium in Taiwan (GIS Taiwan) invites student representatives from around the world to exchange and share their views on contemporary issues and concerns. This symposium proves to be the perfect occasion for attendees from different cultures to collaborate fresh ideas and ventures.





The Road from Campus to Job Market

Students at NTU are encouraged to take internships to bridge the industry-academia gap, integrate knowledge and practice, and ready themselves for the job market. The NTU Internship Program offers students various projects and overseas internship opportunities, strengthening the university and the students’ connections with industry. NTU also hosts the Campus Recruitment Events every March. These include a job fair that accommodates over 400 booths offering more than 20,000 job opportunities, as well as a series of company info sessions and company visits that familiarize students and alumni with the job market and career planning. Also, a varied selection of career planning events were held to foster students’ international competitiveness, including international talent development camps, the “Introduction to Business Administration” course series, and the NTU AI Digitized Era Lecture Series. In addition, NTU hosted counseling activities wherein senior professionals and executives were invited to interact with students in person, answer their questions, and prepare them for potential career advancements.



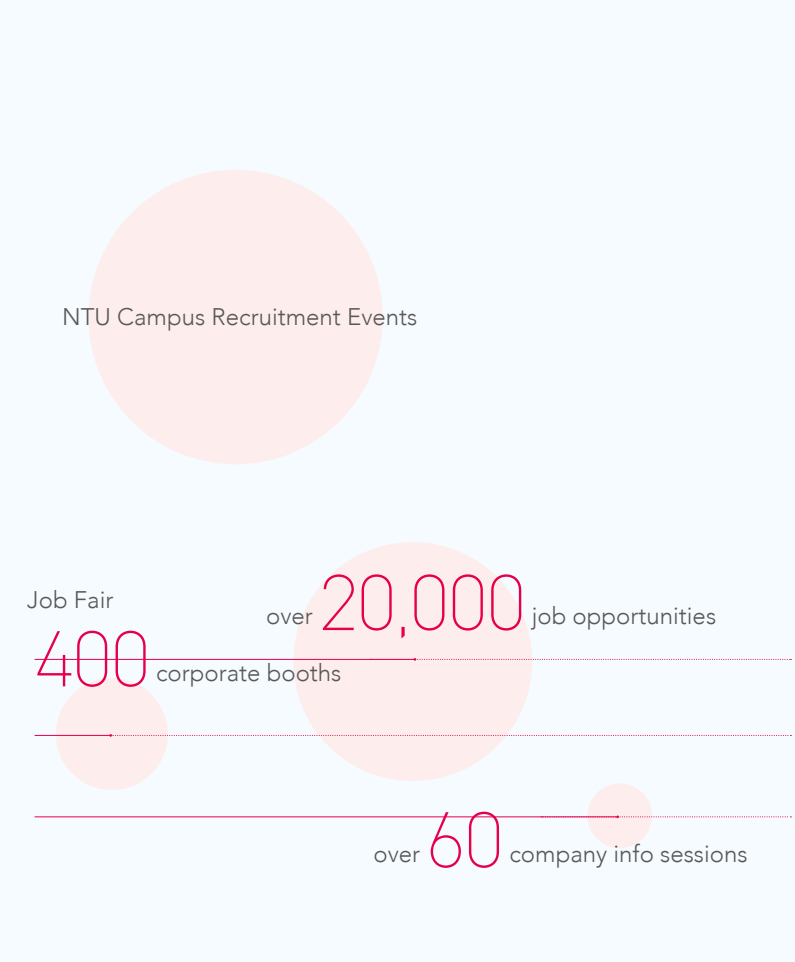
2019 Job Fair



Trail Action Club



Mental Health Truth Advocacy Club

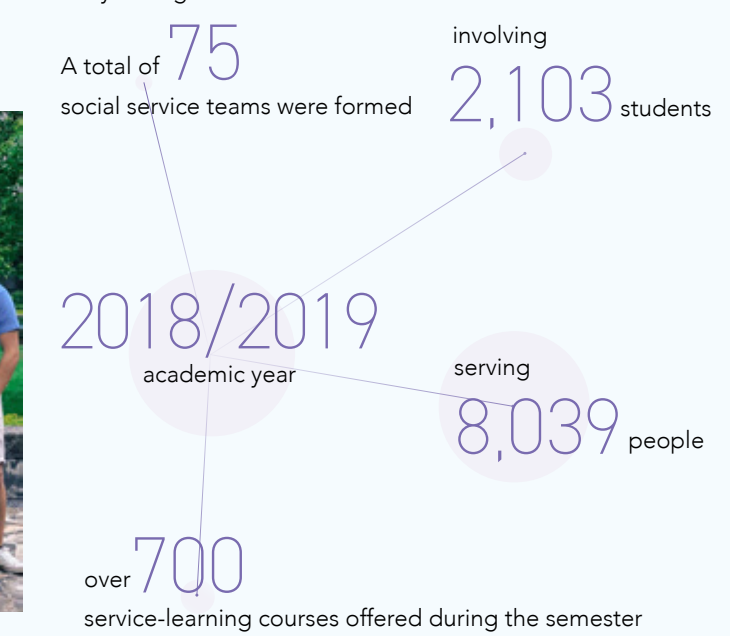


Social Responsibility and Services

NTU students aspire to serve and give back to the people and society of their homeland. In the 2018/2019 academic year, a total of 75 social service teams were formed and sent to places across Taiwan and abroad, involving 2,103 students and serving approximately 8,039 people. During the semester, over 700 service-learning courses were offered to students who wish to engage in social care initiatives. Starting from the 2019/2020 academic year, NTU increased the support for services requiring high levels of expertise, as well as services provided in remote areas, encouraging teams to conduct long-term service plans in specific communities. Also, the Social Devotion Special Award and the Altruistic Award were established to commend altruism in students who enthusiastically value their social responsibility and tirelessly devote themselves to the wellbeing of the disadvantaged.

Recipients of the 2018 Social Devotion Special Award:

- Chia-Sen Tsai: Tsai is dedicated to the initiatives of “Take the Sea Wind in Yuanli” – a team of youths who actively organize local cultural and artistic activities, advocate eco-friendly farming, and address public concerns. Tsai and the team rediscovered the unique wisdoms of rural life that are missing from present day urban culture, effectively reestablishing a modern link for the urban-rural divide.
- Li-Yu Chen: Chen established the NTU Mental Health Truth Advocacy Club. Besides enhancing public knowledge of mental disorders, Chen and the club members visited medical care institutions to care for patients with mental disorders, striving to present their authentic life stories and reduce social exclusion of people with mental illness.
- NTU Shanfu: Established in 1983, this club has provided long-term social services for the Bunun community in Haiduan Township, Taitung, and built strong connections with the locals. Over the years, an estimated 1,000 NTU students have participated in NTU Shanfu, and many continued to serve the society after graduation.





## Housing on Campus: Live and Learn Together

NTU has 26 dormitory buildings and a total of around 12,000 beds, serving as a second home to international and local students alike. Each dormitory building is allotted one or more counselors to guide and help students. In addition to featuring study and seminar rooms as well as gyms and dance studios, our spacious dormitories also provide the setting for a variety of living and learning projects. For example, there are now three living-learning centers for group discussion, and related freshmen courses are offered to enrich students' lives and to create a friendly, interactive environment. The campus also houses eight cafeterias, six convenience stores, one print shop, and one bicycle shop that offer NTU members a variety of food choices and daily necessities.

$$26 \text{ student dormitories} = 21 \text{ on-campus dormitories} + 5 \text{ BOT dormitories}$$



12,000 beds



1-2 dormitory counselors per building



- study rooms
- seminar rooms
- gyms
- dance studios

Multifunctional public spaces:

8 cafeterias



6 convenience stores



3 Living-Learning Centers



## Innovation and Entrepreneurship: D-School@NTU

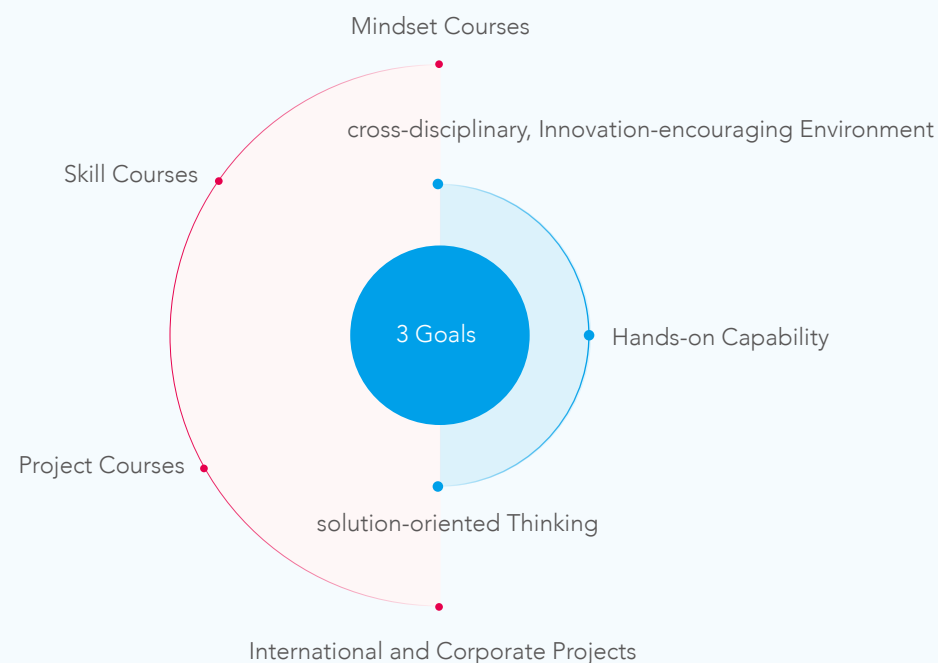
### Unique Learning Experiences at D-School

Innovation is not equivalent to fantasy gone wild; it is grounded in the internal practice of thinking that eventually yields fruitful results. Home to a group of talented students and experienced teachers, Stanley Wang D-School@NTU welcomes students who desire to maximize their aptitude in imagination and creativity.

D-School designed its curricula around three pivotal goals: fostering an innovative interdisciplinary, environment, developing students' hands-on capabilities, and practicing solution-oriented thinking. D-School's course offering is categorized into the following groups: "Mindset Courses," "Skill Courses," "Project Courses," and "International and Corporate Projects." Through design-oriented learning, real-world problems are introduced in class for students to seek innovative, feasible solutions that meet both individual and commercial needs, and are technologically feasible and truly innovative.

### Perfect Environment to Foster an Interdisciplinary Mindset

D-School actively recruits experts and scholars from different fields both on and off campus. Formed by students from different universities and departments, classes at D-School evoke enthusiastic curiosity in both students and teachers, motivating students to step out of their comfort zone and develop interdisciplinary communications skills.



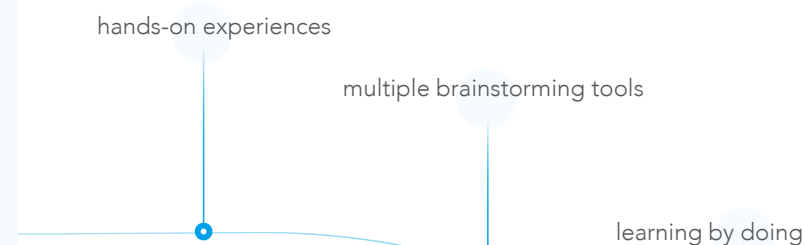
### Makerspace: The Cradle for a Maker Culture

D-School provides a space where students can make things and verify designs themselves. The space is equipped with multiple brainstorming tools, materials, and lightweight processing machines. In this makerspace, creative ideas go from intangible thoughts to tangible products, and sometimes from presentable prototypes to total chaos, nurturing in students a spirit of learning-by-doing innovation that fears no failure.

### Classrooms without Borders at D-School

iPodia's virtual "Classroom without Borders" is an online course platform initiated by the University of Southern California. Through distance learning, the platform allows students around the globe to interact and learn together at the same time in the same virtual classroom through the internet, joining in-depth discussions with classmates from other countries for various projects. D-School started to offer "Principles and Practices of Global Innovation" when becoming a member of the iPodia Alliance in 2014. Students taking the course get to make friends from every corner of the world and experience life in the global village.

Through this course, students from the University of Southern California, the Korean Advanced Institute of Science and Technology (Kaist), Peking University, and Shanghai Jiao Tong University team up to complete innovation projects while acquiring knowledge about distinct business cultures from each other. This experience boosts students' international competitiveness and helps them make remarkable strides in global innovations.

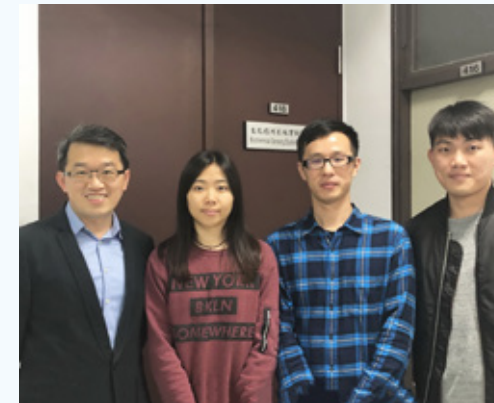




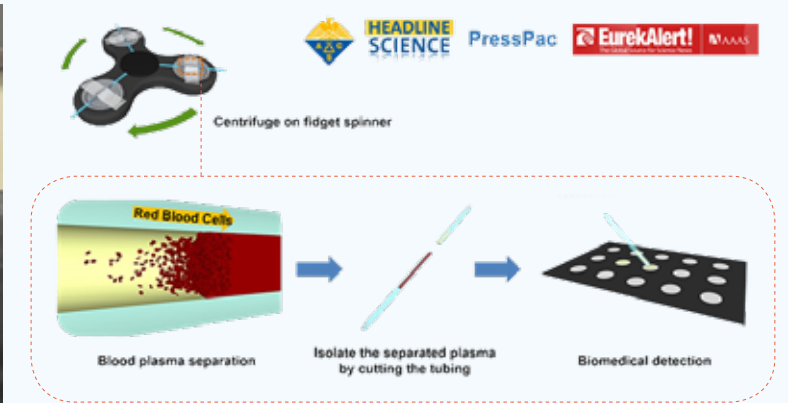
# Top Research

Social responsibility at NTU is grounded on excellent and robust research foundations. We encourage faculty and students to pursue internationalization, elevate the school's international presence, and extend their global influence. Meanwhile, we concern ourselves with localization and the problems facing our nation and society. We deem it our responsibility to tackle these problems and provide an upward driving force for society. The UK-based *Times Higher Education* (THE) released its University Impact Rankings for the first time in April 2019 by evaluating universities according to their contributions to the sustainable development goals (SDGs) set by the United Nations. NTU was ranked 70<sup>th</sup> worldwide. Notably, in the rankings of individual SDGs, NTU ranked No. 1 for SDG16—Peace, Justice and Strong Institutions.

NTU boasts the most comprehensive range of disciplines and subjects in Taiwan. Our faculty members have long dedicated themselves to sustainability topics. In addition, they actively participate in promoting and planning policies and research closely related to next-generation sustainability, including food safety, food and farming education, long-term care, smart cities, sustainable environments, and energy transition.



Team led by Dr. Chien-Fu Chen

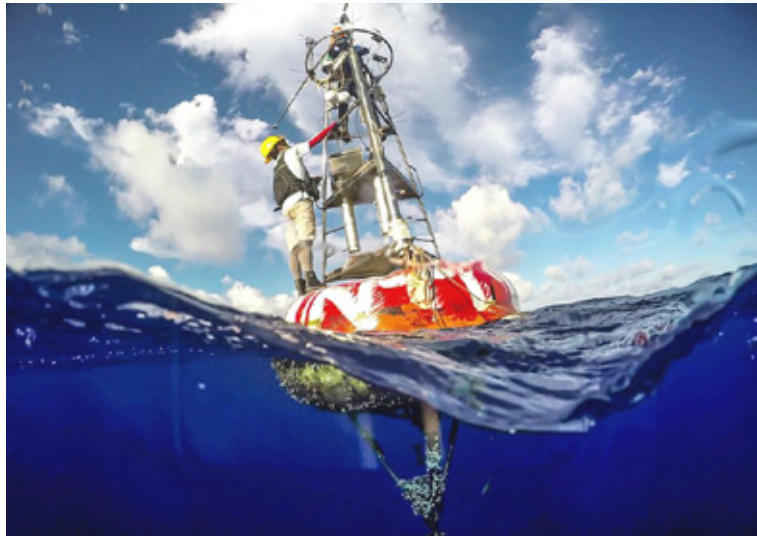


Fidget spinner developed by the team

## Fidget Spinners Adapted for Medical Testing

Fidget spinners are inexpensive flat, multi-lobed fingertip tops with a ball bearing at the center. The flick of a finger sets a fidget spinner spinning quickly, making them ideal, inexpensive toys for relieving nervousness and stress. Now, researchers have found new applications for these spinners: separating blood plasma from whole blood for medical diagnosis and testing. This new method possesses immense diagnostic value in regions lacking electricity and resources. Led by Dr. Chien-Fu Chen, an associate professor of the NTU Institute of Applied Mechanics, the team used fidget spinners as centrifuges for blood plasma separation. With this small gadget and appropriate test paper, areas facing resource scarcities can now perform medical testing and diagnosis of diseases such as AIDS.

*Anal. Chem.* 91: 1247-1253, 2019.



Data buoys



NTU researchers on the team



### Data Buoys Enable Precise Typhoon Prediction and Tracking

Weather buoys deployed by the NTU Institute of Oceanography successfully recorded data gathered from a passing super typhoon for the first time in history. For this particular field, it is the first contribution ever to be conducted by an entire team of local NTU researchers. For years, scientists have struggled with the problem of insufficient high-resolution in situ oceanic data to analyze super typhoons. In addition, little is known about why warm sea surfaces turn icy cold after typhoons. The means to decipher these issues were provided by the two sets of buoys deployed by the team, which unveiled continuous data for the interaction between the atmosphere and the ocean throughout the crucial incident. This study has made significant contributions to the advancement of timely natural disaster warnings and the mitigation of life and property losses.

*Nature Communications* 10(1627), 2019.

### Industrial Innovations in AI-Enabled Smart Life



AI-embedded development kit

The OmniEyes mobile video platform introduces edge intelligence to cloud and fog computing, enabling a dashcam to analyze and provide real-time street views and information through IoT technologies. Moreover, these tasks can be performed with limited transmission bandwidth, computing capability, and storage space. Outside of Taiwan, OmniEyes is discussing collaboration with the largest map data provider in Vietnam and a supplier of portable and driving video recorders for US police. In the future, OmniEyes will reach out to even more countries in Southeast Asia and North America. It will extend the application of its product line from smart cities to real-time street views and info searches, AR navigation and direction guides, fleet management, smart logistics, dynamic maps, and the map data market for autonomous vehicles.



Group photo at the 2018 Future Tech Breakthrough Award Ceremony





### Healthcare Project for Women and Children in Guatemala via Borderless Medicine

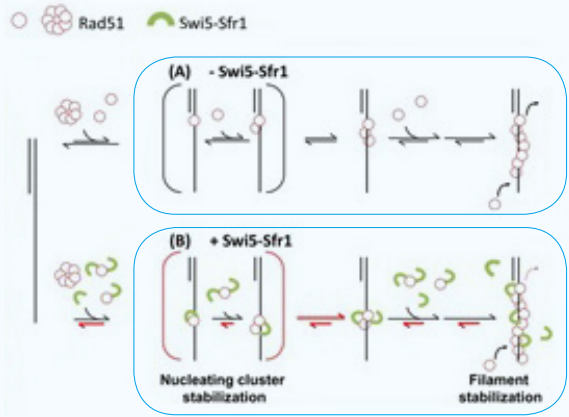
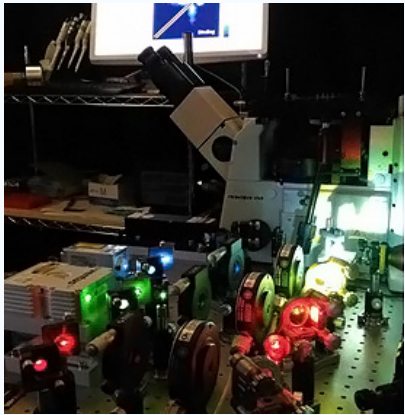
NTU Hospital launched the “Project for Improving Maternal and Neonatal Health Care in Guatemala through the Utilization of Medical Technologies” in 2016. Since then, the hospital has dispatched obstetric and neonatal specialists to Guatemala, initiated close collaboration with two Guatemalan public hospitals, and organized local workshops. In 2017, NTU Hospital provided advanced training to five medical professionals from Guatemala at its Obstetrics and Gynecology Department and Neonatology Division. Both sides have actively engaged in furthering this bilateral medical and health cooperation so as to enhance Guatemala’s medical infrastructure, including hospitals, obstetrics centers, health centers, health service stations, and midwife referral systems. These advances will help pregnant women receive expeditious and adequate care when required.



NTU Hospital team and Guatemala delegates



NTU Hospital neonatal specialist demonstrates neonatal respiratory care.



### Regulatory Mechanism of DNA Homologous Recombination at the Forefront of Evolution Studies

A research team consisting of members from NTU and the Tokyo Institute of Technology in Japan has identified the regulatory mechanism of DNA homologous recombination. The team used single-molecule methods to directly observe the kinetic process of homologous recombinases’ assembly onto and dissociation from DNA while also examining how accessory proteins regulate this process to facilitate DNA repair. The study found that two species use the same molecular mechanism to regulate the assembly of Rad51 recombinases, revealing the evolutionary conservation of this regulatory mechanism. One of the corresponding authors, Prof. Hung-Yuan Chi of the NTU Institute of Biochemical Sciences, proposed that the study unveiled how other accessory proteins, such as breast cancer-associated BRCA2, affect the mechanism of DNA recombination and repair. These findings have significantly contributed to and reinvigorated the field of cancer biology. *PNAS* 115(43): E10059-E10068, 2018.

### Global Breakthroughs in Carbon Capture and Utilization Materials and Technologies

The greenhouse effect arising from carbon emissions has attracted worldwide attention. Carbon capture can help solve this problem, but existing devices are relatively large and inefficient. A research team consisting of Professors Kuo-Lun Tung, Chia-Wen Wu, and Cheng-Liang Chen from the NTU Department of Chemical Engineering is working to solve this problem by developing an integrated system for carbon capture and utilization. This innovative system overcomes the shortcomings of conventional devices, including poor thermal efficiency, unwieldy bulkiness, and brief lifespan. It reuses carbon dioxide, making it an excellent example of the circular economy and sustainable materials. Captured carbon dioxide can be applied in the production processes of petroleum and other chemicals, reducing operating costs to only one-third of old systems. This novel materials technology for carbon capture earned the team a gold medal at the 2016 Invention and New Product Exposition in Pittsburgh, US. The carbon separation and conversion process won a National Innovation Award in 2017.



# Global NTU

## Innovative International Collaborations and Interdisciplinary Programs

NTU has been an active member among the world's leading universities. By building platforms for academic and administrative exchange, NTU creates opportunities for varied international collaborations and enhances its global reputation through numerous venues of cooperation. Every year, NTU receives more than 140 delegations and over 800 university guests, as well as organizes multiple outgoing university-level delegation visits. NTU strives to strengthen its bond with international organizations and has joined hand with its partner universities to present sessions at global higher education events. These associations and events include: APRU (Association of Pacific Rim Universities), AEARU (Association of East Asian Research Universities), ASAIHL (Association of Southeast Asian Institutions of Higher Learning), SATU (Southeast and South Asia and Taiwan Universities), APAIE (Asia-Pacific Association for International Education), AIEA (Association of International Education Administrators), Going Global conferences, NAFSA: Association of International Educators, and EAIE (European Association for International Education). Recently, NTU further reached out to prestigious universities and colleges in Europe, launching joint innovative projects, such as dual and triple degree programs, that bridge multiple institutions. Also, we plan to launch NTUixHub, an NTU-centered multinational, cross-disciplinary research group, to diversify our international reach and demonstrate our social concerns while increasing NTU's international visibility and academic impact.



New initiatives for international collaborations with universities in Eastern Europe

## Study Abroad Programs for Cultivating International Elites

Currently, NTU offers 670 student exchange programs with 49 countries. Every year, a campus-wide Study Abroad Fair is held, where international students at NTU are invited to introduce their home universities, bringing in the latest information about programs available and facilitating interaction between international and local students on campus. Meanwhile, local students who have participated in the student exchange programs share their overseas experiences. In 2019, an NTU Family Meeting was organized as an addition to the Study Abroad Fair, where guests from NTU's partner universities provided firsthand information in person.

Each year, about 300 NTU students, enrolling in summer or short-term programs, study at NTU's partner universities in countries such as the United States, Canada, the United Kingdom, Germany, Japan, Spain, and Australia. Also, visiting student programs are available for students who wish to study for one semester to one year at world-renowned universities such as Harvard University, the University of California at Berkeley, Massachusetts Institute of Technology, and Cambridge University. To provide students with further opportunities to study abroad and to strengthen international academic collaborations with its partner universities, NTU actively organizes multi-degree programs, such as the

- 49 countries
- Over 670 student exchange programs



Exchange students from the Technical University of Munich, Germany



International Degree Students' Farewell Party



Dual Bachelor's Master's Degree Program with Temple University in the United States, as well as GIP-TRIAD – a triple degree program collaboratively offered by NTU, the University of Tsukuba in Japan, and the University of Bordeaux in France. The flexible and diverse types of programs with varying study periods not only encourage students to schedule overseas study as a part of their academic life at NTU, but also enhance campus internationalization and nurture talents with an international outlook.

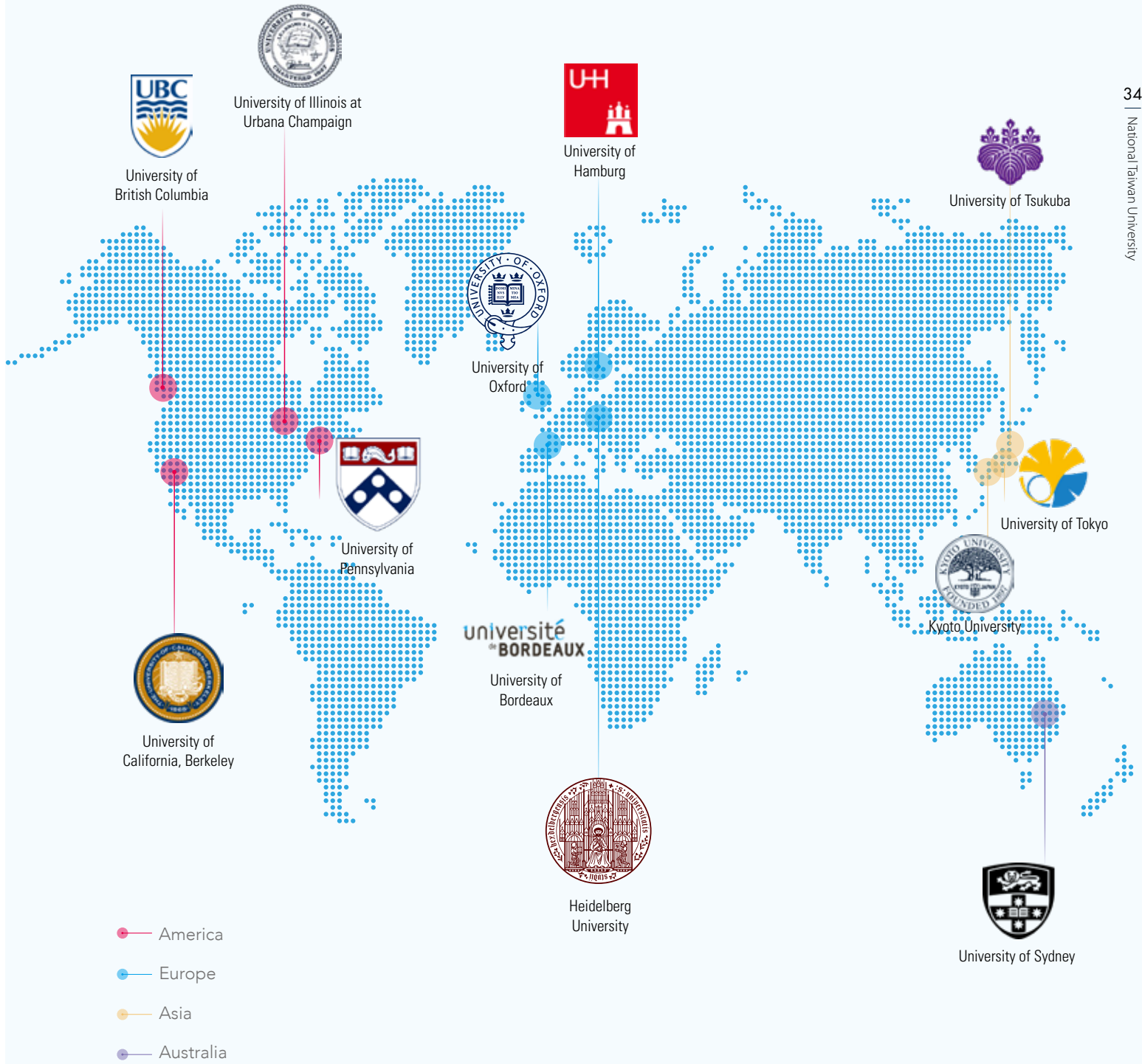
Reinvigorating the Brand of NTU to Attract Talented Students

In a move to attract international talents more effectively, NTU has reviewed and coordinated its strategies for overseas student recruitment, as well as bolstered and extended its brand to more audiences worldwide. Besides regularly and actively attending education fairs in Southeast Asian countries, NTU joined hands with its partner universities, alumni associations, and Taiwan's embassies in these countries to extend its reach to local elite senior high schools, organizing campus recruitment seminars and exchange activities for local students. This year, NTU extended its reach to Eastern Europe for the first time, sending a president-led delegation to Poland, Hungary, and Slovenia to promote advanced studies at NTU.

This August, NTU launched the 1<sup>st</sup> Science Innovation School for Global Young Scientists, attracting 13 teams of students from 9 countries to receive one-week training and present their projects at a competition. Besides offering generous scholarships and exam-free admission opportunities, NTU hopes to showcase its teaching and research strengths in order to incentivize outstanding overseas students to enroll at NTU. In the future, we will organize more short-term events targeted at other disciplines to seek and nurture international talents across all fields of academia.



NTU 1<sup>st</sup> Science Innovation School for Global Young Scientists







Orientation activities for international students

### Strategic Partnerships Established to Coordinate International Collaborative Endeavors

NTU launched the Strategic Partnership Project in 2014 as a strategic move to bolster existing international collaborations and open up new ones. Since then, NTU has formed ties with 7 leading universities abroad and helped establish over 200 collaborative programs. The project mediates potential collaborators through seed funding and expands their areas and networks of collaboration with the flagship program. Each program thus develops into a multinational research alliance that involves more than four universities. These programs foster an encouraging environment for faculty and students to come up with diverse, interdisciplinary international action plans and showcase tangible outcomes and achievements. These include publishing research journal articles, organizing academic conferences in Taiwan, facilitating cross-national education/exchange programs, advancing industry-academia cooperation, and active engagement in global social concerns. Overall, this project has helped NTU make significant advancements in such sectors as teaching and learning, academic excellence, international networking, and social engagement – laying a foundation for NTU to fulfill its social responsibilities.

### NTU Plus Academy: Diverse Short-Term Programs

The short-term programs of NTU Plus Academy combine professional learning and local cultural experiences for students from around the world to receive academic training and join diversified activities (e.g., group visits to cultural sites) in order to experience Taiwan’s vibrant local customs and colorful landscapes.

NTU Plus Academy offers year-round programs that cover various subjects, including visual and performance arts, Chinese and sinology, engineering, natural science, research experiments, and social sciences. Currently, over 20 programs are available every year, attracting over 3,000 students in total. International students of the programs are allowed to take courses at NTU and experience the excellent research environment on campus. Also, advisors are recruited from the local student community to help and socialize with the enrolled students. Many international students who attended NTU Plus Academy have later returned for a student exchange program. Some even earn degrees at NTU, becoming bona fide members of the NTU family.



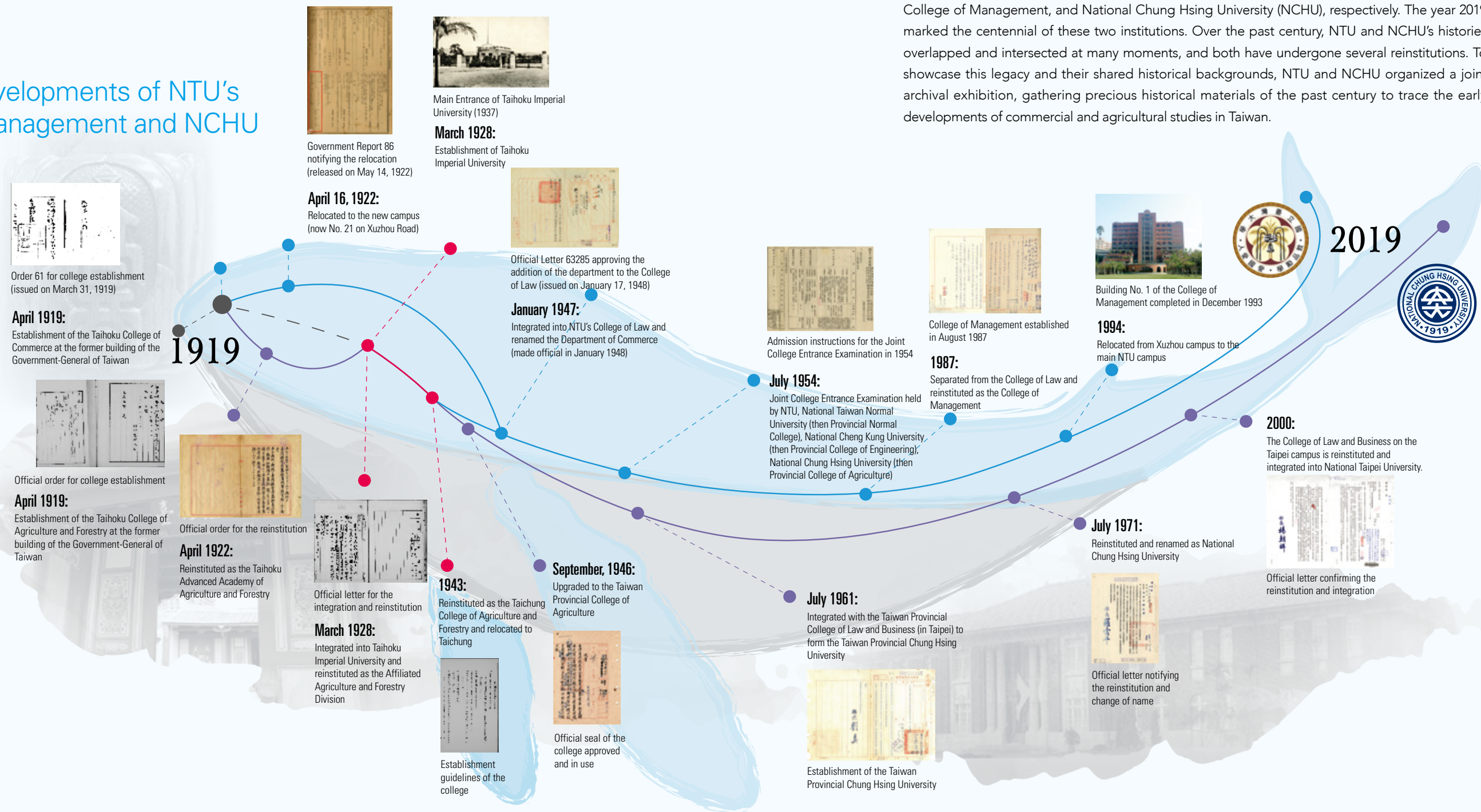
International students enrolled in the summer programs of NTU Plus Academy





# Tracing a Shared Origin: A Century of University Histories

## Historical Developments of NTU's College of Management and NCHU



### Overview

A university's core beliefs and developments are comprehensively documented in its archival records and materials. Back in 1919 Taipei, the Taihoku College of Commerce and the Taihoku College of Agriculture and Forestry were established in tandem. The two colleges later developed into NTU's College of Management, and National Chung Hsing University (NCHU), respectively. The year 2019 marked the centennial of these two institutions. Over the past century, NTU and NCHU's histories overlapped and intersected at many moments, and both have undergone several reinstitutions. To showcase this legacy and their shared historical backgrounds, NTU and NCHU organized a joint archival exhibition, gathering precious historical materials of the past century to trace the early developments of commercial and agricultural studies in Taiwan.



Establishment of the Colleges for Commerce and Agriculture

During the First World War, Taiwan’s demand for professionals in commerce, agriculture, and forestry grew with the rapid rise of industries. In 1919, the Government-General of Taiwan established the Taihoku College of Commerce and later the Taihoku College of Agriculture and Forestry. The headquarters of the Taihoku College of Agriculture and Forestry was built and completed in 1926 – the building later becoming NTU’s Administration Building. Featuring classical Baroque style, the building is adorned with red bricks for its main structure and black tiles for the symmetrically slanted roof. The highlight of the building is the magnificent yet elegant Corinthian columns at the main entrance. A witness to the history of NTU, this building has served various roles from the main building of the Affiliated Agriculture and Forestry Division to the Administration Building of NTU. In May 1927, the college was renamed and reinstituted as the Taihoku Advanced Academy of Agriculture and Forestry.



Group photo of the first class of graduates from the College of Commerce in front of the former building that housed the Government-General of Taiwan. (Source: Koo Chen-Fu Memorial Library of the NTU College of Social Sciences)



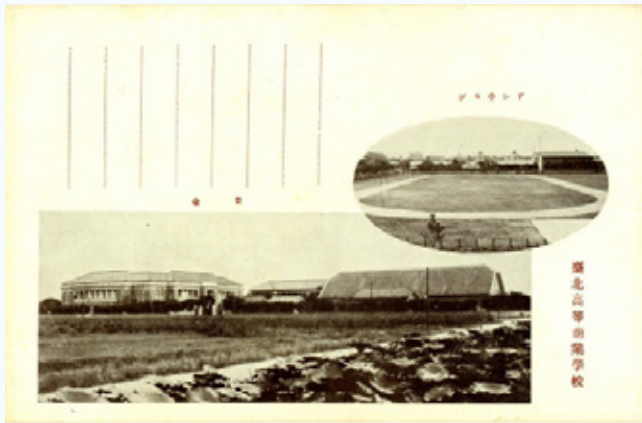
The Corinthian columns and stucco washing finish at the Administration Building's main entrance. (Source: NTU Archives)



Taihoku College of Commerce. (Source: Koo Chen-Fu Memorial Library of the NTU College of Social Sciences)



Postcards featuring the Taihoku College of Commerce. (Source: Special Collections, NTU Library)



Merger and Extension

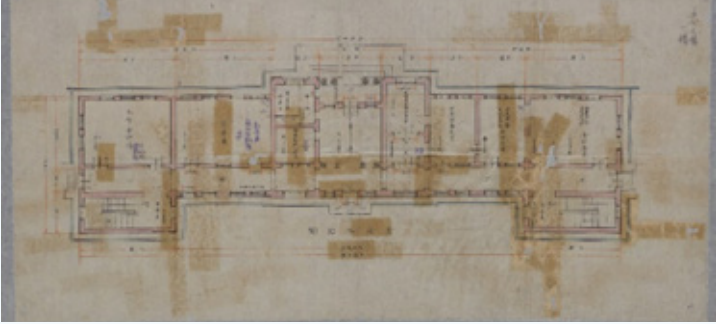
The Taihoku College of Commerce was renamed and reinstituted several times before finally becoming NTU’s College of Management. The Commerce Building was completed in 1954 (now one of NTU Hospital’s dormitories for medical staff at No. 19 on Xuzhou Road), which set the foundation for the Department of Commerce to evolve into the College of Management. The Graduate Institute of Business Administration was established in August 1972. A decade later in 1982, the Ministry of Education sent an official recommendation for NTU to upgrade the Department of Commerce to a college dedicated to business studies. Ultimately in August 1987, the Department of Commerce was separated from the College of Law and reestablished as the seventh college of NTU – the College of Management, with Prof. Paul S. C. Hsu serving as the first dean of the college. In July 1994 Building No. 1 of the College of Management was completed and the College of Management was relocated from Xuzhou campus to the main NTU campus.

Conclusion

University archives comprise different forms of historical records. All these records, ranging from documents to images of campus landscapes, are witnesses to the trajectory and development of both the university and its campus. By organizing this joint archival exhibition, NTU and NCHU not only offered the public a glimpse of the abundant cultural and historical records kept and maintained by universities, but also demonstrated the spirit of diversity in Taiwan’s higher education to the international community.



Group photo of the first class of graduates from the Affiliated Agriculture and Forestry Division, taken in 1928 in front of the now Administration Building on NTU's main campus. (Source: Special Collections, NTU Library)



A historical plan of the first floor of the Administration Building showing the location of the office of the president of the Taihoku College of Agriculture and Forestry (currently the office of NTU's Vice President for Student Affairs). (Source: Special Collections, NTU Library)



Taihoku Imperial University. (Source: Special Collections, NTU Library)



Distinguished guests completing the whale-shaped puzzle featuring the historical timelines of NTU's College of Management and NCHU as part of the inaugurating ceremony in Taipei.



圖例說明 Map Legend

 餐廳 Restaurant	 網球場 Tennis Court	 汽車停車場 Vehicle Parking
 廁所 Toilet	 游泳池 Swimming Pool	 機車停車場 Motorcycle Parking
 提款機 ATM	 排球場 Volleyball Court	 自行車拖吊保管場 Bike Pound
 銀行 Bank	 籃球場 Basketball Court	 自行車修理站 Bike Shop
 博物館 Museum	 棒壘球場 Baseball Field	 捷運站 Metro Station
 訪客中心 Information	 人工草皮球場 Artificial Turf Court	 捷運站出入口 Metro Station Exit
 書店 Bookstore	 醫療站 First-Aid Station	 公車站 Bus Stop
 哺(集)乳室 Nursery Room		

互動式電子地圖查詢  
Interactive map of the NTU Campus  
<http://map.ntu.edu.tw>

# 國立臺灣大學臺北校區地圖

Map of NTU Campus in Taipei City 2019 Y 10 M 09 D

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NTU MAP



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