**College of Life Science**

NTU and Academia Sinica Cast New Light on Neuroblastoma Treatment

To cope with this mechanism behind the disease NB, Prof. Hsin-Lin Lee’s research team, after 15 years of work, discovered that any hydrogen receptor (ARBs) can improve the survival of patients, and demonstrated ARK’s comprehensive mechanism of the disease, and thus, they also discovered that the narrower steroid hydroxydilactone (THIB) can suppress the growth of malignant cells growing and prevent metastasis. These results have been published in Cancer Research and ACS Chemical Neuroscience and new drug development is expected.

Prof. Hsinyu Lai: hslai@ntu.edu.tw

Polymersine Enhance DNA Repair

Repair of damaged DNA is a prerequisite for cells to maintain genome integrity and to develop. It is a complex, stepwise, and site-specific process. DNA repair capacities are fundamentally modified by these environmental factors. In addition to DNA repair, cell survival, and biochemically driven stress to address this issue. Our study shows that 5-fluorouracil (5-FU) is an energy drink “Red Bull”, which can promote the homologous recombination-mediated DNA repair system. This discovery provides possible strategies for cancer treatment.

Prof. Hsiu-Chen Peter Lin: peterlin@ntu.edu.tw

The Secret of Using Fair-Red Light for Photoproduction in Cytoskeletons

Some unique cytoskeletons can harness fair-light for photoproduction in addition to visible-light. By studying these cytoskeletons, we can also show the importance and productivity of fair-light for the environment. Eventually, we hope to transfer this cytoskeletonal system to crops, helping them to increase photosynthesis efficiency and productivity.

Prof. Ming-Yang Ho: mingyang@ntu.edu.tw

**Office of Academic Affairs**

**International Interdisciplinary Master Degree Programs**

NTU strives to cultivate talents with capabilities to solve global challenges and thus established international interdepartmental Master degree programs with focus on agriculture technology, biodiversity, and disease prevention. These programs highlight NTU’s research achievements and integrate various resources on campus to produce high-quality talents.

Prof. Tzu-Hsun Lin: tzuhsun@ntu.edu.tw

**Real Education for All @ NTU**

NTU embraces diversity and autonomy by creating a transborder learning ground across campuses and academic seminars; around 1,500 students from all over the country gathered together at NTU Summer College, studying together and forming networks for collective social endeavor beyond the classroom, in a true essence of liberal education.

A. P. Hu Family Endowed Chair Professor

**NTU’ s BLACK Summer Camp: A Social Practice, the Social Responsibility**

“NTU-BLACK Forest Summer School” is a camp that emphasizes co-learning. During the first week, NTU students visited the tribe Kaqin to learn about the natural environment, tribal culture, and agricultural culture with local residents. In the second week, students planned and conducted the field study to design different courses to stimulate Tong-Fu junior high school students’ interest in topics such as traditional aboriginal territories, post-disaster recovery and tribal economy. Thus, this is not only promotes the Experimental Forest as a field for NTU students to practice social services, but also help the Tong-Fu junior high school to improve their summer curriculum.

Prof. Shu-Wen Huang: shuwein@ntu.edu.tw

**College of Electrical Engineering & Computer Science**

**Equivalent Capacitance Guided Dummy Fill Insertion for Timing and Manufacturability**

Dum fill insertion is widely adopted for reducing the thickness variation after chemical mechanical polishing during semiconductor manufacturing. To minimize timing degradation, existing strategies either induce increased capacitance degradation. In contrast, in the ASPDAC 2020 best paper, we analyze equivalent capacitance feasible regions to widely prevent unwanted increase in equivalent capacitance of timing critical nets.

Prof. Eric Hui-Ru Jiang: huirujiang@ntu.edu.tw

**Improving the Sensitivity of Radioactive Receiver by High Linearity MMIC Amplifier**

The high-quality widebanding local oscillator (LO) signal plays an important role in the radio astronomical heterodyne receiving system. The received signal quality is improved by adopting MMIC power amplifier in LO chain with a linearizer at the carrier terminal of the transmitter. It features +0 dBm IMD3 across 18-26 GHz with +0 dBm output power.

Prof. Hsiu-Wang: hsiuwang@ntu.edu.tw

**Power Converters for Emerging Solar Photovoltaic Systems**

This research develops power converter hardware and control for improving output power and reliability for all photovoltaic systems. An innovative structure using differential power processing converters is used to maximize power production while minimizing losses. This enables solar power for applications like wearable, health-monitoring devices, drones, and electric vehicles.

Prof. Katrin Jeronimovs: kjer@(ntu.edu.tw)

**College of Law**

**The Development of Digital Technology and the Future of Law**

Our research theme The Development of Digital Technology and the Future of Law is a joint project with Hamburg Law School emphasizing topics on important issues such as self-driving, financial technology, social media and democratic governance, digital communication, cyber-privacy, and artificial intelligence. Discussion derives from various aspects of jurisprudence, media law, commercial law, criminal law, evidence and procedural law.

Prof. Jen-Guang Lin: andrewlin@ntu.edu.tw

**Legal Integrity Safeguards for State Institutions and National Public Officials**

Legal Integrity Safeguards for State Institutions and National Public Officials is a collaborative study with Radboud University and the University of Hong Kong, which implement a comprehensive discussion of the anti-corruption and anti-corporate discourse.

Prof. Jen-Guang Lin: andrewlin@ntu.edu.tw

**Comparative Law**

Comparative Law has long been our law school’s main research focus. More recently, our research and emphasizes the possibility of regional legal integration, such as Civil Law or Contract Law in the developing East Asian countries and courts, comparative analysis of the similarities and differences in Taiwan, Japan, South Korea, and China.

Prof. Jen-Guang Lin: andrewlin@ntu.edu.tw
College of Liberal Arts

Tradition and Innovation in Sinology
Department of Chinese Literature has directed world-class research and teaching in collaboration with institutes worldwide, such as University of Cambridge and Harvard. Professors have offered award-winning open courses on Chinese classics. With this concerted effort, NTU is set to maintain its status as a leading institution.

Prof. Chia-Ling Mei: mei@ntu.edu.tw
The Taiwan Indigenous Collections Housed at the Overseas Museums
Department of Anthropology has devoted to the preservation of Taiwan’s Indigenous collections. The representation work of the late Prof. Chang Che, Local Aesthetics with Foreign Perceptions: The Taiwan Collections Housed at the British Museum (1911-1920). The project aimed to reiterate cultural diversity on the world stage. It offers a glimpse at the transcultural interaction between Taiwan’s and the world in the 19th and 20th centuries.

Dr. Kai-ying Lin: oprlans@ntu.edu.tw
New Theories in East Asian History
Department of History positions itself at the forefront of a cutting-edge research on the History of East Asian Kingship. One focus of this multilateral and interdisciplinary research is the Sino-German Advisory Council on Global Change’s 2012 World in Transition report.

Prof. Hao-Ming Chen: haomingchen@ntu.edu.tw
College of Science

Planarization and Integration of Three-Dimensional Magnetic Field Sensor
Author Ching-Ray Chang: crchang@phys.ntu.edu.tw
New findings for advances in the hydro-climatical process in climate models.

Prof. Huai-Chen Kan: kan@ntu.edu.tw
College of Medicine

Dysbiosis of Gut Microbiota Associated with the Development of Allergies in Infants
We investigated what microbes might be involved in analyses of infant twins. Abundant and premature colonization of Ruminococcus gnavus shapes the aberrant structure of the intestinal microbial consortium of allergic infants. This bacterium and its gene products may be targets of therapies for allergic diseases.

Prof. Min-Hui Lo: mlo@as.ntu.edu.tw
College of Engineering

The development of sustainable energy, such as photovoltaic cells, has become an important subject of human socio-economic development. Prof. Kang Li’s research group in Chemical Engineering Department has recently developed a novel bulk-heterojunction-electron-transporting layer, which can efficiently enhance the NIR Photorepsonse of the derived inverted perovskite solar cells.

Prof. Chun-Chen Chueh: ccchueh@ntu.edu.tw
The Information Advantage of Underwriters in IPOs
Using a unique data set of deal-level trading data in bookbuilding initial public offerings (IPOs), we find strong evidence that lead underwriters trades in IPO forms are significantly related to subsequently IPO abnormal returns. Understanding of bookbuilding IPOs gain unique insight into the values of these client firms and trade on this information advantage.

Dr. Min-Chieng Yang: mcyeh@ntu.edu.tw
College of Public Health

The Discovery of Particulate Matter (PM) and Precision Prevention for Chronic Diseases
We utilized an exclusive “operando X-ray absorption spectroscopy” to perform a superior activity to electrochemically convert CO2 into CO with a high conversion efficiency and a low energy consumption. This technology joint-development makes iSentek a worldwide leader in the market.

Prof. Hao-Ming Chen: haomingchen@ntu.edu.tw
College of Business

The Career Satisfaction of IT Professionals With Mixed Job Demands
Cancer demand for information technology (IT) professional has technically increased. Organizations do not manage technical competencies. The results suggest that pure managerial demands lead to the highest satisfaction while adding technical demands less satisfaction but in a complex pattern that allows potential compromises.

Prof. James J. Jiang: jjiang@ntu.edu.tw
College of Management