

Office of Research and Development

Introduction

NCU established the Office of Research and Development in March 1997 for the purposes of integrating the research resources in the university, developing international academic exchange and cooperation, and promoting the technology transfer of R & D achievements into industries in the university. Aside from striving for extramural R&D funding outside of NCU, it intends to facilitate the research performance and to boost the international competitiveness. In recent years, this office has demonstrated concrete results in upgrading the achievements of research and development under endeavors of every research unit and faculty members, by means of gradually establishing the R&D regulations and mechanism for the faculty.

R & D Office has two divisions, “Planning”and “Research Promotion” , It has set the center for academia and industry collaboration which is in charge of patent management, technology transfer, and entrepreneurship incubation. Also, it has regulated promotion and collaboration of academia and industry projects of the University.

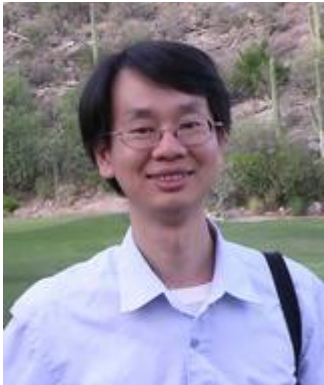
In addition, there are two centers which are as follows: Precious Instruments and Environmental Education. The office supervises the center for multidisciplinary research as well, which is in charge of the establishment and rewards-related matters of university-level centers of NCU.

Vice President: Prof. Yan, Shang-Yao



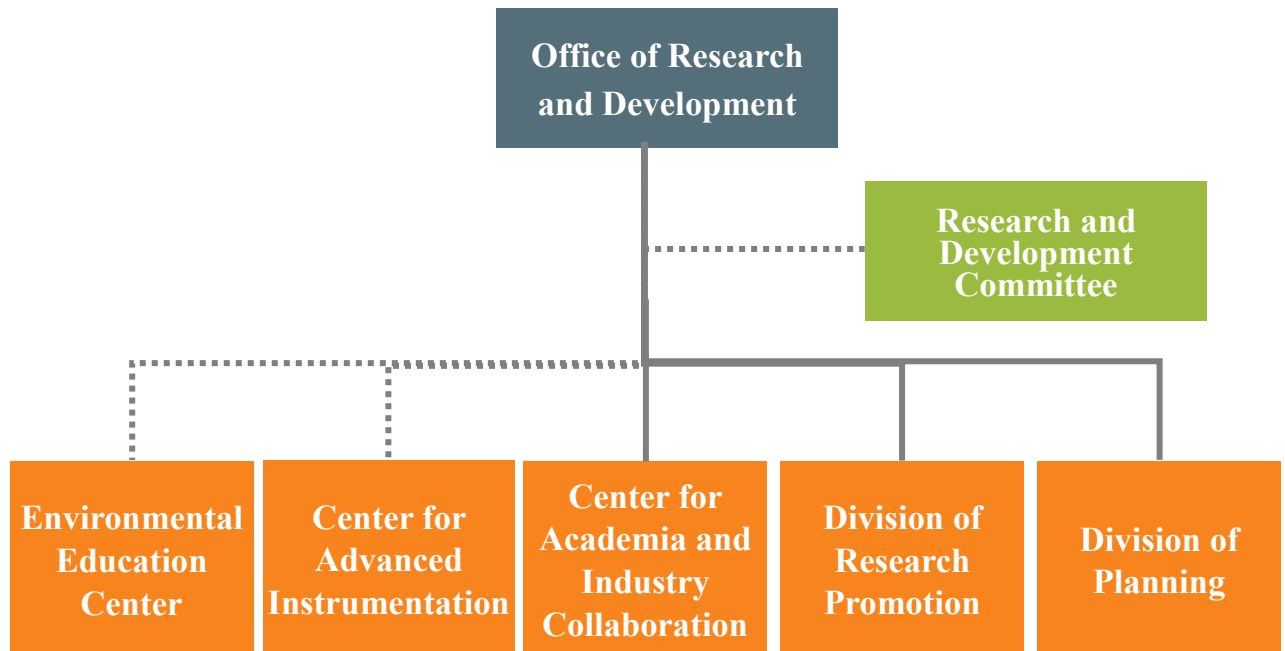
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Office of Research and Development organization chart



Division of Planning

Aiming at managing and planning the school development and seeking for education advancement, Planning Division conducts the business related to campus area as following :

- Prepare the five-year School Development Plan of NCU.
- Compile the Annual Financial Planning Report of NCU.
- Compile the Annual Performance Report of NCU Endowment Fund.
- Plan the new campus (Bade) and its teaching and research resource development.
- Conduct the meeting for School Development Committees.
- Conduct the University Evaluation.

Division of Research Promotion

- Manage the administration of Industrial-Academic Cooperation Projects.
- Integrate and coordinate interdisciplinary research projects.
- Arrange Research and Development Meeting.
- Manage affairs with respect to the supervision and assessment of operational performance of the institutional research centers and centers in United Research Centers.
- Administer the overhead costs and the balance of Industrial-Academic Cooperation Projects and the allocation and appropriation of overhead costs.
- Administer affairs of award application, subsidy application, heritage initiatives and academic & career development related events.
- Arrange and promote events pertain to international and domestic research exchange affairs.
- Plan, set up and maintain the System of Research and Development.
- Analyze the data of academic research achievement on both research faculty members and the industrial-academic cooperation projects.

Center for Academia and Industry Collaboration (NCU-CAIC)

1. NCU GLORIA | Global Research & Industry Alliance

As the demand for healthcare is escalating around the globe on a steep curve, it is essential and urgent to develop novel medical technologies that are effective, economical, and simple to use. NCU faculty members have mobilized their research repertoire toward beneficial development of novel technologies pertaining to “smart healthcare and disease prevention” in a wide variety of disease settings, with the potential to forever change the medical landscape. Specifically, NCU’s wearable medical devices, biomedical photonics, rehabilitation assistive devices, telemedical cloud networking, noninvasive vaccines, etc. are state-of-the-art inventions that represent high-impact research with high commercial stakes. NCU GLORIA’s mission is to bring faculty research to commercial products by catalyzing the formation of covalent bonds between academia and industry.

2. IP management, Technology Licensing and Transfer

Our main issues are patenting of the abundant academia achievements at NCU, and properly licensing and/or transferring the technology thereof to the industry, thus driving the development of the industry and society. We also engage to explore the technologies with originality, business potential, and forward-looking at the colleges, and find the matching opportunities to link with the direction of the industrial development and national strategies.

3. Industry-Academic Cooperation

By combining academic theories and practical experiences of enterprise, the industry-academic bilateral cooperation helps both sides to obtain mutual benefits as well as enhance

potentiality and competitiveness, and actually the bilateral cooperation helps NCU R &D capability grow up even quickly.

4. Professional Accreditation

NCU-CAIC provides accreditation services of professional leaning to judiciary, government agencies and individuals. The accreditation service includes accreditation of patent infringement and other professional field in NCU.

5. Innovation and Incubation

NCU-CIAC intends to create physical infrastructure, an ecosystem and business incubation activities for promoting innovations and start-ups. We are providing necessary services, such as training and education, and facilitating networking with professional resources, including mentors, experts, consultants, advisors, and professors for start-ups. NCU-CIAC also provides a platform for startups to not only fuel their entrepreneurial journeys with funding, but also build a community of potential investors, customers, business partners and fellow entrepreneurs. Also, we promote laboratory entrepreneurship, strengthen innovation and entrepreneurship courses, build an entrepreneurial base and actively promote local community participation in the development of entrepreneurship

6. Germination Program (GP)

The principle of GP is to bridge the gap between “major” academy discoveries and commercial application and to promote the concurrent technology and business development of academic research outcomes to close the technology gap between discoveries and industry. The goal is to establish an institutionalized procedure of exploiting and prospecting industrial value of research outcomes to motivate researchers on developing early-stage technology application and commercialization. The ideal endpoint is to develop and cultivate fundable startups. We also identify specific application of research outcomes to raise market value and probability of attracting future investment from industry.

Precious Instruments Utilization Center

Precious Instrument Utilization Center is established in order to administer the overall resources, and the management and use of the precious instruments, avoid double purchasing and display the most value and efficiency of use. The Center receives the funding of Ministry of Science and Technology(MOST) to invite experts at instrumentation supervise the use of instrument and offer other consultation services. Besides, technicians of precious instruments are also retained to conduct operation and analysis.

In order to provide better service for outside user, seminars for introduction of the instruments and applications and training are held regularly. The instrument center put a lot of effort to maintain the instrument in the best condition in order to provide better service for

nearby area as well as out area. Currently, the development is directed to optics, nanotechnology, communication, semiconductor processing, chemistry, chemical engineering, material, life science, physics etc. In order to fit the future development of the university. The instruments can be classified into five categories: materials characterization, chemical analysis, semiconductor processing, communication device, and Geotechnical Engineering. There are thirteen sets of instrument and equipment providing excellent service for the units in and out of the university.

- Ultrahigh resolution cold field emission scanning electron (CFE-SEM)
- Ultra-High Resolution FE-SEM
- Electron Spectroscopy for Chemical Analysis, ESCA/Auger
- JEOL-JEM2100 High Resolution STEM (TEM)
- Solid-State Nuclear Magnetic Resonance Spectrometer (SNMR)
- Solution 600 MHz Nuclear Magnetic Resonance Spectrometer System (LNMR)
- Ultra High Resolution Mass Spectrometry (MASS)
- Laser Direct Write Image System (MASK)
- High Frequency Power and Noise Measurement System (Tuner)
- Single-Crystal X-ray Diffractometer (SCX-ray)
- Transmission/grazing-incidence small-angle X-ray scattering (SAX-ray)
- FEI Versa 3D High-Resolution Dual-Beam Focus-Ion-Beam System (FIB)
- Geotechnical Centrifuge and Shaking Table (GCST)

Center for Environmental Education

- Promote environmental education, promote people's understanding of the interdependence of individuals and society and the environment, promote environmental ethics and responsibilities for the entire people, and then maintain environmental ecological balance, respect life, promote social justice, and cultivate environmental citizens and environmental learning communities.
- The Environmental Protection Administration of the Executive Yuan applied for and implemented various types of environmental education and training programs.
- Application and implementation of local government environmental education training programs.
- The integration of environmental education related resources in our school.
- Training training qualified environmental education personnel.
- Receive entrusted by the competent authority of environmental education to handle related certification and study activities.
- Environmental education related lesson plans, teaching materials or research and development work.