Responsible unit	Innovation Incubation Centre of the Research and Development Department

I. Policy:

To reflect the public nature of higher education and fulfill the university's social responsibility, NCUE's Innovation Incubation Center of the Research and Development Department actively promotes innovative businesses and assists traditional industries. (4) Consistent with the national strategy, we build a diversified platform with precision machinery, smart electric vehicles, and green energy industries as core technologies to form a refined incubation network and develop local competitive industries. Using the expertise and resources of the university, we help enterprises that are pursuing sustainable development goals to start up and grow. By providing long-term assistance in improving industrial technology and helping manufacturers to obtain government R&D subsidies, we cultivate industrial cooperation and expand the benefits of the guidance provided by the university in the Taichung-Changhua-Nantou Region.

In recent years, NCUE has gathered diverse resources from several of its departments, academic and research institutions in neighboring areas, the Changhua County Industrial Advancement Association, public associations, and the service centers of industrial parks and has integrated the resources of teams formed by full-time teachers with practical experience. Through the guidance of experts in various professional fields, we provide manufacturers with extensive, thorough proposals and strive to implement them. Jointly with a neighboring university (Dayeh University), we set up the "Changhua County Local Innovative Organization Alliance" and undertook cross-discipline and cross-university cooperation in order to promote R&D among small and medium-sized enterprises, as well as industry–university cooperation in innovation in the Taichung-Changhua area. Faculty members with relevant expertise are sent to cooperate in R&D with manufacturers facing a problem or otherwise in need. We also encourage enterprises to apply for government R&D subsidies (such as SBIR and CITD) to reduce their R&D costs, enhance their innovation and R&D capabilities, and increase their innovation momentum.

While the experts and scholars guide the manufacturers, they also pass on their experience and enhance the effects of their teaching by leading master's students and undergraduate research students in their work. The students deepen their understanding of enterprise operations by verifying theories in the practical world and engaging in real work, which enhances their global knowledge and ability to work professionally in preparation for their future careers.

With the help of universities and research institutes in neighboring areas, the manufacture of precision machinery has been revitalized, while the power of process technology, innovation, and R&D has increased. We also focus on expanding sales to maintain industrial development momentum, driving the connected development of industrial chains to achieve economic prosperity, creating job opportunities, planning marketing strategies, and expanding international business

opportunities.

II. Achievements:

In the 2021 academic year, NCUE implemented the "Science and Technology Care Project to Support Small and Medium-sized Enterprises" and the "Industry Guidance for Innovation in Industrial Parks Project" while guiding local small and medium-sized enterprises toward industrial upgrades. The results of the guidance are as follows:

(I) Science and Technology Care Project to Support Small and Medium-sized Enterprises

1. Participating enterprises/experts and scholars/students: 15/15/26
2. New product/technology development: 3 cases
3. Technical and talent training courses: 2 sessions
4. Applications for government subsidies: 4 applications/2 approved, with a total subsidy of 1.048 million
5. Patent application and utilization: 3 cases
6. National contests: 5 cases

(II) Industry Guidance for Innovation in Industrial Parks Project

1. Participating enterprises/experts and scholars: 80/20
2. Technological guidance: 11 cases
3. Technical and talent training courses: 4 sessions
4. Applications for government subsidies: 2 applications, applying for a total subsidy of 4.653715 million
5. Productions based on student projects: 6 cases
6. Student internships: 28 people

(III) Utilizing the power of local public associations, we have cooperated with local industrial zones in Changhua (Fuxing, Tianzhong, Pitou, and Chuansing Industrial Parks), Changhua County Industrial-University Advancement Association, the Plumbing Association of Taiwan, and the Taiwan Sheet Metal Management Association to enhance the momentum in the value chains of cluster industries, and have used NCUE's academic and research resources to assist the industries to develop according to their unique characteristics.

(IV) The joint projects that guide industries in their R&D and innovation promote information exchange between the industries and universities. The industries are guided to achieve intelligent manufacturing and design, while the short-term guidance offered to manufacturers on technology and various kinds of talent and practical training courses helps them improve their techniques and meet the requirements of current trends. As a result, production efficiency can be improved, while the manufacturers can increase their industrial competitiveness.

Below is a list of the manufacturers that successfully applied for government subsidies with our help in 2021:

Guided manufacturer	Subsidy program	Amount of subsidy	Instructor
Nuvo Enterprise Co., Ltd.	Changhua County SBIR	862,315 NTD	Professor Chih-Hsiung Shen
Shang Ho Tang Foods Co., Ltd.	Changhua County SBIR	750,000 NTD	Professor Chei-Chang Chiou
Sin Ye Technology Co., Ltd.	Changhua County SBIR	867,300 NTD	Professor Mu-Jung Huang

(V) Through industry–university cooperation and internships, students are encouraged to participate in the national college-level competitions that focus on industry–university innovation practices, so that the students can be guided to discuss the issues in their disciplines in depth and apply what they have learned. The industry–university research cooperation strategy allows the university to strengthen its integration with industry, promote the assimilation between academics and industry practices, and cultivate talents with the practical skills industries require. Verifying theories in the real world and engaging in practical work enables the students to deepen their understanding of enterprise operations and prepare them for their future careers.

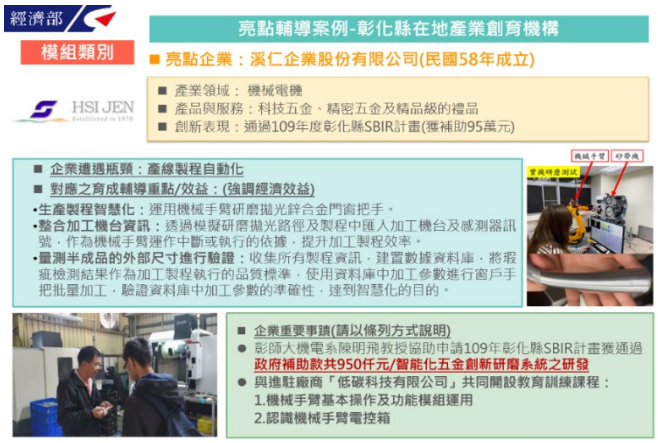
Competition the students joined	Instructor	Entry	Award
National Colleges and Universities Industry-University Innovation Practice Competition	Professor Ming-Fei Chen	Application of Online Detection of Defects based on YOLO to Automatic Hardware Grinding and Polishing System	Honorable Mention
National Colleges and Universities Industry-University Innovation Practice Competition	Professor Ming-Fei Chen	Online Detection System of Defects on Hardware Fasteners Built based on a Neural Network Model with a Small Number of Samples	Practical Award
National Colleges and Universities Industry-University Innovation Practice Competition	Professor Chih-Hsiung Shen	CMOS-MEMS Piezoresistive Pressure Sensor Coated with Nano-SiO2 at the Front	Honorable Mention
National Colleges and Universities Industry-University Innovation Practice Competition	Professor Yeong-Lin Lai	Perovskite solar cell IoT Antenna Integration Technology	—
National Colleges and Universities Industry-	Professor Kai-chao Yao	Multi-functional Innovative Desk Lamps Integrated with	—

University Innovation Practice Competition		Smart IoT	

Corresponding SDG indicator association	□SDG01□SDG02□SDG03□SDG04□SDG05□SDG06□SDG07 □SDG08□SDG09□SDG10□SDG11□SDG12□SDG13□SDG14 □SDG15▓SDG16□SDG017

Photos

Caption: Key guidance case – Nuvo Enterprise Co., Ltd.



Caption: Key guidance case – Hsi Jen Enterprise Co., Ltd.

Caption: Group photo of the County Executive, principals, and guests at the 2022 National Colleges and Universities Industry-University Innovation Practice Competition

Caption: Speeches at the 2022 National Colleges and Universities Industry-University Innovation Practice Competition

Related Links

N/A