

# Tzu Chi University Research Centers Overview

Compassion | Science | Technology | Sustainability

# Research Ecosystem Overview

## University-Level Centers: Interdisciplinary Excellence



Brain & Compassion (BCARE)



Sustainability & Disaster Mgmt



Herbal Medicine



AI Computing



Smart Biomedical Chips



Tzu Chi Studies

## College-Level Centers: Health Innovation



Lifestyle Medicine



Lactation Support



Non-Pharmaceutical Care

# Center for Brain, Compassion, and Altruism Research and Education (BCARE)

Director: Prof. Ingrid Y. Liu | College of Medicine

## Mission

Advance human mental and brain health as a foundation for social harmony and sustainable development.

## Key Capabilities

- Integration of Contemplative Neuroscience with Social & Affective Neuroscience.
- Investigation of neuroplasticity: how compassion training reshapes neural networks.
- Design of measurable, scalable mental well-being interventions.

# Research and Outreach Center for Sustainability and Disaster Management

Director: Prof. Chang-Hsien Tai | College of Biomedical Science & Technology

## Mission

A hub for sustainability and resilience in Eastern Taiwan, integrating academic innovation with global humanitarian expertise.

## Key Capabilities

- Living Lab: Research in a region exposed to seismic activity and climate vulnerability.
- Tech Integration: AI early-warning systems, LiDAR, and drone applications.
- Community Implementation: Resilient community pilots and disaster education.



# Center for Herbal Medicine and Natural Products Research

Director: Prof. Ming-Der Lin | College of Medicine

## Mission

Scientific validation of traditional wisdom and modernization of natural resources for drug discovery.

## Key Capabilities

- **Discovery:** Isolation of bioactive compounds from medicinal plants.
- **Resource Bank:** Establishment of the TCU Herbal Extract Resource Bank.
- **Validation:** Molecular pharmacology using disease models to ensure safety and efficacy.
- **Translation:** Pathways for industrial application and product development.

Open platform for interdisciplinary laboratory collaboration.

# Artificial Intelligence Computing Center

Director: **Prof. Hao-Jen Hsu** | College of Biomedical Science & Technology

## Mission

Accelerating smart healthcare and long-term care innovation through cross-disciplinary AI research.

## Key Capabilities

- **Generative AI:** Research enablement for GenAI and LLM training.
- **Integration:** Bridging medicine, nursing, and technology disciplines.
- **Infrastructure:** High-performance computing for deep learning.



Clinical collaborations via the Tzu Chi medical system; Incubation of interdisciplinary projects.

# Smart Biomedical Chip Research Center (SBCRC)

Director: Prof. Huai-Yi Chen | College of Biomedical Science & Technology

## Mission

Advancing precision medicine via microfluidic biomedical chips for rapid diagnostics.

## Key Capabilities

- Platform: Microfluidic chips for high-sensitivity analysis.
- Diagnostics: Molecular diagnostics for cancer, infectious diseases, and cardiovascular health.
- AI Integration: AI-assisted signal interpretation and risk prediction.
- Pipeline: End-to-end capability from fabrication to clinical validation.



Partnerships with Semiconductor/MEMS manufacturers and Hualien Tzu Chi Hospital.

# Education and Research Center for Tzu Chi Studies

Founded jointly by Tzu Chi University & Yin-Zheng Education Foundation

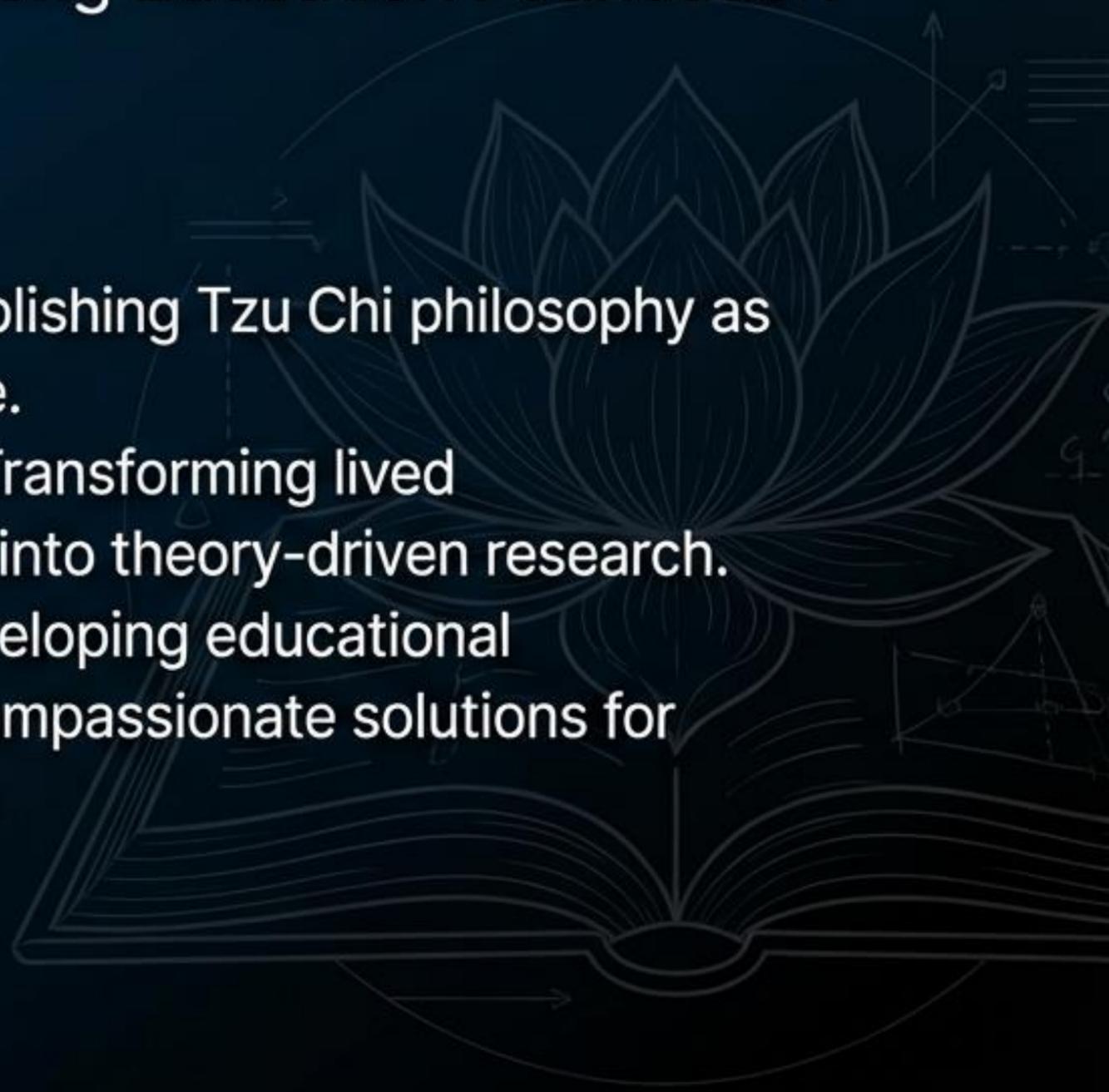
## Mission

A globally recognized hub for rigorous scholarship grounded in humanitarian practice.

## Key Capabilities

- **Systematization:** Establishing Tzu Chi philosophy as an academic discipline.
- **Knowledge Transfer:** Transforming lived humanitarian practice into theory-driven research.
- **Global Relevance:** Developing educational programs that offer compassionate solutions for contemporary society.

Theory-driven, research-based knowledge.





# Global Chinese-Certification Center of Lactation Support Competency

Director: Assoc. Prof. Shu-Fang Wang | College of Nursing

## Mission

Standardizing training and international certification for Chinese-speaking lactation professionals.

## Key Capabilities

- Certification: Rigorous written and practical testing operations.
- Accreditation: Aligned with international CERPs and continuing education credits.
- Database: Maintaining a global registry of certified professionals.



# Non-Pharmaceutical Care Research Center

Director: Assoc. Prof. Chun-Hou Huang | College of Nursing

## Mission

Accelerating the translation of evidence-based non-pharmaceutical interventions into clinical practice.

## Key Capabilities

- **Implementation:** Building R&D-to-clinic capacity.
- **Multidisciplinary:** Collaboration across medicine, nutrition, psychology, and physical therapy.
- **Techniques:** Meridian therapy, vagus nerve stimulation, reflexology.
- **Focus Areas:** Cancer care, symptom management, health promotion.

