

Global Summer School

The Mystery of the Chronic Disease Clock: Cells, Genes and Molecular Networks

July 20–30, 2026

Harbin Institute of Technology, Harbin, P.R. China



Contact Information

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General Information

Life Sciences, the most disruptive cutting-edge discipline of the 21st century, focuses on the mechanisms of life and integrates medicine, informatics, engineering and big data. It directly drives human health, economic growth and social development, and has emerged as the most globally focused fundamental natural science. At the critical juncture where the "Century of Life Sciences" converges with the "wave of bio-economy", chronic diseases have now surpassed infectious diseases as the leading cause of death globally. The Faculty of Life Sciences and Medicine closely follows the era's proposition of "putting people and lives first", and is dedicated to launching the International Summer School themed The Mystery of Chronic Disease Clock: Cells, Genes and Molecular Networks.

With chronobiology as the key, this program explores the molecular mechanisms underlying the occurrence, progression, and potential reversal of chronic diseases such as diabetes, obesity and cardiovascular diseases along the circadian rhythm axis. Through a progressive five-stage curriculum covering "Theory-Omics-Editing-Clinic Translation-Industry Innovation", it guides participants to dissect the molecular gears of the "chronic disease clock" and reshape cellular and genetic networks, contributing novel targets, strategies and talents to global chronic disease prevention and control.

We have invited top scholars from home and abroad to jointly design high-quality courses, roundtable discussions and immersive experimental practices, which not only incorporate local cultural elements but also embrace a global perspective. Experience-based outreach training is adopted to stimulate innovative thinking, and peer-assisted learning is promoted to facilitate holistic human development. We foster a robust academic atmosphere through knowledge immersion and interdisciplinary integration, and embrace international resources in an open and diversified manner. The summer school aims to consolidate participants' biological foundation for life and health, build a high-level exchange platform for teachers and students at home and abroad, and inspire young scholars to grow into globally competitive leaders in life sciences.

Attendance Requirements

The program is open to undergraduate students with a strong interest in life sciences. Applicants must demonstrate English proficiency sufficient for academic discussion, writing, and oral presentation.

Courses and Lectures (Tentative)

Content	Detailed information	Credit	Class Hour
International Courses	Molecular Regulatory Network of Chronic Diseases	1.5	24
Academic Frontier Lectures	Research Progress in Neurodegenerative Diseases	-	2
	Advances in Diabetes Research	-	2
	Advances in Cancer Treatment	-	2
	Inferring Super-Resolution Tissue Architecture by Integrating Spatial Transcriptomics with Histology	-	2

Research Projects

Content	Detailed information	Credit	Class Hour
Offline Practice Projects (Select one)	Immunofluorescence labeling of cellular structure	0.5	12
	Analysis of Protein Structure by Cryo-Electron Microscopy (Cryo-EM) and Nuclear Magnetic Resonance	0.5	12
	Screening and analysis of differentially expressed genes in tumors based on public databases	0.5	12
Discussion and Interaction	1. Faculty Q&A Session 2. Career & Future Planning Forum 3. Informal Networking Gathering	-	
Visiting and Studying	1. Tour of the School of Life Sciences and Life Science Research Center, featuring cutting-edge research in molecular biology, genomics, and chronic disease mechanisms 2. Visit to HIT's History Museum and Aerospace Museum	-	

Program Dates and Times

July 20–30, 2026

Registration: July 19, 2026

Please note that the program schedule is subject to change based on actual circumstances.