



INSTITUTION'S  
INNOVATION  
COUNCIL  
(Ministry of Education Initiative)



CAREER POINT  
UNIVERSITY

# Division of Zoology

organizing

## NATIONAL WORKSHOP (05 DAYS)

**Hands on Workshop on Biomedical  
Research Techniques Using *Drosophila melanogaster*  
for Parkinson's Disease Modeling**

**December 10-14, 2025**

**Venue: Auditorium, Block A**

### Sponsored By

Indian Council of Medical Research (ICMR), Ministry of Health  
& Family Welfare (DHR), GoI

### COLLABORATORS

Council of Scientific and  
Industrial Research - Institute of  
Himalayan Bioresource Technology  
(CSIR-IHBT), Palampur, HP

Himalayan Forest Research  
Institute (HFRI)  
Shimla, H.P.

Sher-e-Kashmir University  
of Agricultural Sciences and  
Technology (SKUAST),  
Srinagar, J&K

Technov8 Hub,  
CPU Hamirpur, HP

Center for Nano-Science  
and Technology,  
CPU Hamirpur, HP

Directorate of Community  
Services,  
CPU Hamirpur, HP

## ABOUT CAREER POINT UNIVERSITY

The illustrious Career Point Group "Gopi-Bai Foundation Trust Kota (Rajasthan) Career Point University, Hamirpur (CPUH) is an inspiration. By virtue of Act No. 12 of 2012, the Himachal Pradesh government established the Career Point University Hamirpur in accordance with provision 2(f) of the UGC Act, 1956. The Ministry of Education of the Government of India has granted this university NAAC accreditation and designated it as band promising in the Atal Ranking of Institutions on Innovation Achievement (ARIIA 2021). On August 8, 2012, the honorable chief minister of Himachal Pradesh officially opened it. **The University is authorized to grant degrees under Section 22 of the UGC Act 1956 by the University Grant Commission (UGC)**, a statutory entry of the Government of India. In the Indian state of Himachal Pradesh's Hamirpur district, the campus spans 30 acres and is encircled by the lower Himalayas. We provide a variety of courses in business & management, legal studies, vocational training, basic and applied sciences, computer application, and information technology. By fostering the appropriate talents at the appropriate me, we are honestly working to develop leaders and employable youth.

## ABOUT ZOOLOGY DIVISION

The **Zoology Division** is a cornerstone of scientific inquiry, dedicated to the study of animals and their diverse ecosystems. Within these departments, researchers and educators delve into a wide array of disciplines, including animal behavior, physiology, ecology, evolution, and conservation biology. Faculty members within Zoology Division conduct ground breaking research that sheds light on the intricate workings of animal life, from the molecular level to the ecosystem level. Students in Zoology Division have the opportunity to explore the wonders of the animal kingdom through hands-on laboratory work, field expeditions, and engaging course work. This Division also play a crucial role in addressing pressing environmental challenges, such as habitat loss, species extinction, and climate change, by providing valuable insights in to animal behavior and ecology. Through their research, teaching and outreach efforts, Zoology Division contribute to a deeper understanding of the natural world and help foster a sense of stewardship for the planet and its inhabitants

## ABOUT THE WORKSHOP

This workshop is designed to provide immersive, practical training in using *Drosophila*

*melanogaster* to study Parkinson's Disease (PD)—a complex, progressive neurodegenerative disorder affecting movement, cognition, and overall neurological health. The workshop is ideal for biomedical researchers, postgraduate students, and early-career scholars who aim to explore neurodegeneration using a genetically tractable model system. Despite the increasing prevalence of Parkinson's Disease across the country, there remains a significant gap in experimental research using model organisms, particularly in regions where laboratory-based neuroscience is still developing. While clinical and diagnostic awareness of PD is growing, the availability of mechanistic, lab-driven approaches to study its pathology is still limited.

This five-day hands-on workshop therefore seeks to bridge the gap between theoretical knowledge and experimental skill development in neurodegenerative disease research. It will provide participants with an opportunity to acquire hands-on experience in biomedical techniques using *Drosophila melanogaster*—a genetically tractable, cost-effective model organism that has revolutionized our understanding of human diseases, including Parkinson's.

Parkinson's Disease (PD) and related neurodegenerative disorders are emerging as major health challenges in India, affecting nearly 771,000 people (2019 estimate) with prevalence rates between 33–328 per 100,000 and a relatively younger onset (~51–57 years) than in Western populations.

In Himachal Pradesh, clinical data report a mean PD onset of  $57.4 \pm 12.3$  years and a male-to-female ratio of 2:1, with tremor being the initial symptom in nearly 69% of cases. Broader neurological surveys in the state, including regions adjoining Hamirpur and Kangra, show a 2.6–3.0% prevalence of major neurological disorders, highlighting a tangible burden and the need for region-specific studies.

The fruit fly (*Drosophila melanogaster*) offers a powerful, cost-effective model for studying PD, mimicking key features such as dopaminergic neuron loss, mitochondrial dysfunction, and motor impairment. Its genetic tractability, short life cycle, and conserved disease pathways make it ideal for foundational and translational studies.

Integrating *Drosophila*-based PD research in Hamirpur will build local research capacity, enable exploration of India-specific genetic and environmental risk factors, and establish Himachal as a hub for neurodegeneration research.

This intensive training will immerse participants in the fascinating world of *Drosophila melanogaster*

research—covering every step from fly rearing and genetic manipulation to creating Parkinson's Disease models. Participants will explore behavioral assays to study locomotor deficits, conduct biochemical tests for oxidative stress and neuroprotective responses, and perform microscopic analyses of neuroanatomical changes. Together, these modules offer a powerful blend of discovery, skill-building, and real-world application in experimental neuroscience.

This five-day national hands-on workshop represents a meaningful stride toward advancing biomedical research and fostering innovation in neurodegenerative disease modeling. By blending laboratory training, expert mentorship, and collaborative interaction, it will equip participants with essential experimental and analytical skills to explore Parkinson's Disease through *Drosophila*-based research. Through this collective effort, the initiative aspires to strengthen India's scientific ecosystem and contribute to the broader goal of promoting "Health through Research, Innovation, and Translation."

## SUBTHEMES

1. *Modeling Parkinson's Disease Using Drosophila melanogaster*
2. *Genetic and Molecular Approaches to Neurodegeneration*
3. *Behavioral Assays for Functional Assessment*
4. *Data Interpretation, Communication, and Research Translation*

## OBJECTIVES OF THE WORKSHOP

- Designing and executing genetic crosses to model PD in flies
- Conducting behavioral assays to assess locomotor impairments
- Performing gene expression studies relevant to dopaminergic function
- Analyzing and interpreting data from disease-relevant

## KEY FEATURES

- Participants will complete a pre-workshop survey to assess their familiarity with *Drosophila melanogaster*, molecular biology techniques, and neurodegeneration concepts for tailored instruction and progress tracking.
- Each day will include an interactive morning lecture and an afternoon hands-on session to reinforce theoretical learning through practical application.
- Small group laboratory work will promote peer learning, collaboration, and accuracy in experimental execution.

- The workshop will cover multidisciplinary techniques' including behavioural assays, gene expression analysis, and other techniques essential for biomedical research.
- Participants will practice scientific communication by interpreting data, drawing conclusions, and presenting

## OUTCOMES OF THE WORKSHOP

- **Establishment of a Centre for Parkinson's Disease and Neurodegeneration Research** at Career Point University, Hamirpur (H.P.), addressing a critical regional gap and fostering capacity building in neurodegenerative disease research.
- We could **submit recommendation to National Funding Agencies (ICMR/DBT/etc.)** for initiating translational research grants linking basic neuroscience with therapeutic development for Parkinson's and related disorders.

### Chief Patrons

**Shri Om Maheshwri**

Chancellor  
CPU Hamirpur, HP

**Shri Pramod Maheshwri**

Trustee  
CPU Hamirpur, HP

**Prof PL Gautam**

Pro Chancellor  
CPU Hamirpur, HP

### Patron

**Dr Sanjeev Sharma**

Vice Chancellor  
CPU Hamirpur, HP

### Co-Patrons

**Mr Gulshan Sandhu**

Registrar  
CPU Hamirpur, HP

**Dr Kuldeep Kumar**

Dean Academic Affairs  
CPU Hamirpur, HP

### Conveners

**Dr Shailja Kumari**

Assistant Professor  
Division of Zoology  
CPU Hamirpur, HP

**Dr Subham Kapil**

Assistant Professor  
Division of Zoology  
CPU Hamirpur, HP

### Organizing Secretaries

**Dr Asha Kumari**

Assistant Professor  
Department of Chemistry  
CPU Hamirpur, HP

**Dr Priyanka**

Assistant Professor  
Division of Botany  
CPU Hamirpur, HP

**Dr Sameer**

Assistant Professor  
Division of Mathematics  
CPU Hamirpur, HP

**Dr Sonika**

Assistant Professor  
Division of Zoology  
CPU Hamirpur, HP

### Advisors

**Dr Gulshan Kumar**

Director  
Directorate of Community Services  
CPU Hamirpur, HP

**Dr Rahul Sharma**

Associate Director  
TechnoV8 Hub  
CPU Hamirpur, HP

**Dr Ajay Sharma**

Associate Director  
Center for Nano-Science & Technology  
CPU Hamirpur, HP

## WHO CAN **APPLY**

- Students
- Research Scholars
- Scientists
- Faculty

## REGISTRATION DETAILS

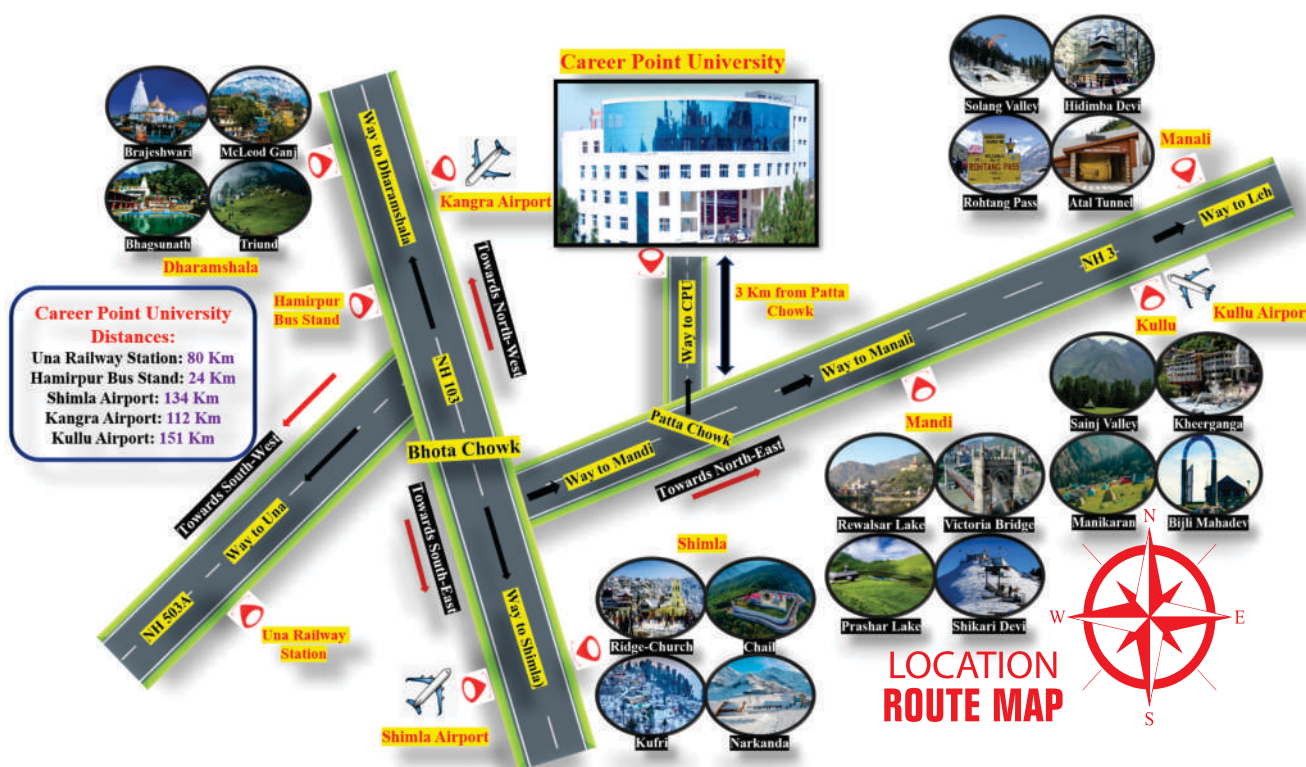
- **Last date of Registration:** November 30, 2025
- **Fee Details:** No registration fees

*Note: Best 40 Participants will be selected for participation in workshop.*



Scan QR code  
for registration

## How to Reach CPU Hamirpur



## For more Details Contact

Conveners: Dr Shailja Kumari, Dr Subham Kapil M: 7018586224, 7018030546, 7649920263  
Email: [shailja.zoology@cpuh.edu.in](mailto:shailja.zoology@cpuh.edu.in)



# CAREER POINT UNIVERSITY

Bhoranj (Tikker-Kharwarian), Hamirpur (Himachal Pradesh) - 176041

96253-80006/7 [www.cpuh.in](http://www.cpuh.in) [hp@cpuniverse.in](mailto:hp@cpuniverse.in)

Corporate Office: Career Point, CP Tower, Road No-1, Kota (Rajasthan) | Ph: 080-47250011