NAAC Criterion-III

3.4.1: The Institution ensures implementation of its stated Code of Ethics for research through the following:

2. Presence of Ethics committee

Central University of Himachal Pradesh

Dharamshala, Kangra (H.P.) - 176215

Constitution of Ethics committee and its Proceedings

Central University of Himachal Pradesh has a duly constituted and functional Institutional Ethics Committee.

फाइल सं: 4-1/हि.प्र.कें.वि./शै/ 2010/खंड -IX/2242–49

हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय

Central University of Himachal Pradesh

(अकादमिक शाखा /Academic Branch)

धर्मशाला-176215, दिनांक: 23 अप्रैल, 2021

अधिसूचना

हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय में माननीय कुलपति महोदय के अनुमोदन के अनुसार तदर्थ आधार (Ad-hoc Basis) पर Institutional Ethics Committee का गठन किया जाता है:

Sl. No.	Name and Address (Email and Mobile Number)	Designation
1.	Prof. Pardeep Kumar, Professor and Dean, School of Life Sciences, Central University of Himachal Pradesh, Temporary Academic Block, Shahpur, VPO Chattri, Tehsil Shahpur, Distt. Kangra (HP) – 176206, Email: pardeepsangla@gmail.com, pardeepsangla@hpcu.ac.in, dean_sls@hpcu.ac.in, Mobile: 7018277931	Chairperson
2.	Dr. Arun Chandan, Regional Director, Regional-cum-Facilitation Centre, North Indian States (RCFC-North), Research Institute in Indian Systems of Medicine (RIISM), Department of Ayurveda COEDG Building, Joginder Nagar, District Mandi (HP) -175015, Email: arun.chandan@gov.in Mobile: 701801026	Basic Medical Science
3.	Dr. Adarsh Kumar, Professor, Department of Veterinary Surgery, College of Veterinary and Animal Sciences, CSKHPKV, Palampur, Distt. Kangra (HP), Email: adarsh9kan@gmail.com Mobile: 9418054434	Basic Medical Science
4.	Sh. Anand Sharma, Advocate, District Courts, Dharamshala, Distt. Kangra (HP) – 176215, Email: anand3694@gmail.com, Mobile: 9816624240	Legal Person
5.	Dr. Vikesh Gupta, Senior Resident, Department of Psychiatry, Dr Rajendra Prasad Government Medical College, Tanda, Distt. Kangra (HP), Email: vikeshgupta7@gmail.com, Mobile: 9459352300	Clinician
6.	Dr. Sachin Sharma, Causality Medical Officer, Dr Rajendra Prasad Government Medical College, Tanda, Distt. Kangra (HP) Email: s1984kaka@gmail.com, Mobile: 9459146300	Clinician
7.	Sh. Narender Paul, Chief Operating Officer, CORD (Chinmaya Organisation for Rural Development) ,Dharamshala, Distt. Kangra (HP), Email: cordsidhbari@gmail.com Mobile: 9816655592	NGO Representative
8.	Mr. Jaswant Yadav S/o Sh. Manohar Singh, Vill. Nagan, PO Chukku, Tehsil Padar, Distt. Mandi (HP), Mobile: 9817196661	Lay Person
9.	Dr. Rakesh Chahota, Professor, Department of Biotechnology, CSKHPKV, Palampur, Distt. Kangra (HP), Email: rkchahota@yahoo.com Mobile:7018093980	Molecular Biology
10.	Dr. Ranjit Kumar, Assistant Professor, Department of Animal Sciences, Dean, School of Life Sciences, Central University of Himachal Pradesh, Temporary Academic Block, Shahpur, VPO Chattri, Tehsil Shahpur, Distt. Kangra (HP) – 176206, Email: ranjitzool17@gmail.com Mobile: 7004842921	Member Secretary
11.	Prof. K.C Sharma, Senior Scientist, Agril. Entomology, Dr. Yashwant Singh Parmar University of Horticulture and Forestry, Nauni, Solan	Member

उपरोक्त गठित समिति विश्वविद्यालय की अकादमिक परिषद व कार्यकारिणी परिषद में अनुसमर्थन के अधीन रहेगी ।

हिंद भूषण 23/4/2021

(हिंद भूषण कुटलैहड़िया)

सहायक-कुलसचिव

.....पृष्ठ – 1/2

प्रतिलिपि– निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाई हेतु:

1. अधिष्ठाता छात्र कल्याण, हि.प्र.के.वि., अस्थायी शैक्षणिक खंड, शाहपुर, जिला काँगड़ा (हि.प्र.) |
2. विभिन्न स्कूलों के सभी अधिष्ठाता, टैब, शाहपुर/धौलाधार परिसर-I&II, धर्मशाला/सप्त सिन्धु परिसर, देहरा, जिला काँगड़ा |
3. विभिन्न विभागों/केन्द्रों के सभी विभागाध्यक्ष/निदेशक, टैब शाहपुर/धौलाधार परिसर-I&II, धर्मशाला /सप्त सिन्धु परिसर, देहरा |
4. वित्त अधिकारी, हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय,पूर्व सैनिक कल्याण भवन के सामने (निकट शहीद स्मारक),सिविल लाइन्स, धर्मशाला, ज़िला काँगड़ा |
5. परीक्षा नियंत्रक, हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय,पूर्व सैनिक कल्याण भवन के सामने (निकट शहीद स्मारक),सिविल लाइन्स, धर्मशाला, ज़िला काँगड़ा |
6. जन-संपर्क अधिकारी, कैंप कार्यालय, हि.प्र.के.वि., धर्मशाला, जिला - काँगड़ा (हि.प्र.) |
7. कुलपति के निजी सचिव – कृपया माननीय कुलपति महोदय के सूचनार्थ |
8. गार्ड फाइल |

हिंदी दुर्लभ 23/4/2021

सहायक-कुलसचिव

.....पृष्ठ – 2/2

Institutional Ethics Committee (IEC)
Central University of Himachal Pradesh
Dharamshala, Kangra

Minutes of Institutional Ethics Committee of Central University of Himachal Pradesh, Dharamshala

Minutes of the Institutional Ethics Committee meeting held on 22nd October 2021 at 11.00 AM through online/offline mode.

The following members were present offline for IEC meeting:

1. **Prof. Pardeep Kumar (Chairman)**
2. **Mr. Jaswant Yadav (Non scientific socially aware person)**
3. **Dr. Ranjit Kumar (Member Secretary)**

The following members were present online for IEC meeting:

1. **Dr. Arun Chandan (Basic Medical Science)**
2. **Dr. Adarsh Kumar (Basic Medical Science)**
3. **Dr. Vikesh Gupta (Clinician)**
4. **Dr. Sachin Sharma (Clinician)**
5. **Sh. Narender Paul (NGO representative)**
6. **Dr. Rakesh Chahota (Molecular biology)**

The virtual/offline meeting of the Institutional Ethics Committee of Central University of Himachal Pradesh (CUHP) was held on **22nd October 2021** at 11:00 AM through Google Meet: meet.google.com/nqe-xfcb-mjv

Dr. Ranjit Kumar, Member Secretary, IEC and Assistant Professor, Dept. of Animal Science (Zoology),CUHP, Dharamshala introduced all the members of the Institutional Ethics Committee (IEC). He welcomed all the members of IEC and presented details of the research activities carried out at CUHP.

Prof. Pardeep Kumar, Chairman IEC, CUHP thrown light on background of the research activities especially the research works carried out by research scholars and faculties of Central University of Himachal Pradesh. He discussed future research plant of CUHP with all the honorable members of IEC.

Prof. Pardeep Kumar then discussed the agenda points with the members –

Agenda 1. Ethics approval for Research Project entitled " **Insight into secretome, metallome and metabolic pathways of rickettsial pathogens: a way towards candidate immunogens for translational medicine**" sanctioned to Dr Dixit Sharma (Young Scientist award) from Department of Health Research, Ministry of Health and Family Welfare, Govt. of India in Department of Animal Sciences, Central University of Himachal Pradesh, Dharamshala. The Budget amount of Project is Rs. 35,50,500/- only. **For this** Dr. Dixit Sharma **was told to give the short power point presentation about his work. The members queried about the methodology proposed by Dr. Sharma for sample collection. The members become assured that this work contains little animal part which does not contains ethical issues. The major part of project contains bioinformatics work.**

Decision: Approved for research study.

Agenda 2. Formulation of research design for research scholars in accordance with Ethics guidelines. **For this** Dr Ranjit Kumar discussed with the members that the research proposal and research study of CUHP must be prepared in accordance with ethics guideline. The members will adviced that every student must be aware with ethics guideline before preparation of research problem.

Decision: Members were agreed and decided to make introductory session on ethical issue in research.

Agenda 3. Any other matter.

Decision: The members were satisfied with the ethical standard used in CUHP.

The meeting ended with giving thanks to chairman and all the members of Institutional Ethics Committee of CUHP, Dharamshala.

Institutional Ethics Committee (IEC)
Central University of Himachal Pradesh
Dharamshala, Kangra

S. No.	Name	Signature	Approved / Not Approved
1.	Prof. Pardeep Kumar		Approved
2.	Dr. Arun Chandan	(DR ARUN CHANDAN)	Approved
3.	Dr. Adarsh Kumar		Approved
4.	Dr. Vikesh Gupta		Approved
5.	Dr. Sachin Sharma	23/10/2021	Approved
6.	Sh. Narender Paul		Approved
7.	Mr. Jaswant Yadav		Approved
8.	Dr. Rakesh Chahota	RKCHAHOTA	Approved
9.	Dr. Ranjit Kumar		Approved

Prof. Pardeep Kumar
Chairman
Institutional Ethics Committee, CUHP, Dharamshala

Institutional Ethics Committee (IEC)
Central University of Himachal Pradesh
Dharamshala, Kangra
Minutes of Institutional Ethics Committee of Central University of Himachal Pradesh, Dharamshala

Minutes of the Institutional Ethics Committee meeting held on 22nd August 2022 at 11.00 AM.

The following members were present in offline mode:

1. **Prof. Pardeep Kumar (Chairman)**
2. **Prof. Adarsh Kumar (Basic Medical Science)**
3. **Dr Sunil Kumar – (Special Invitee)**
4. **Dr Rajender Kumar – (Special Invitee)**
5. **Dr. Ranjit Kumar (Member Secretary)**

The following members were present in online mode:

1. **Dr. Rakesh Chahota (Molecular biology)**
2. **Prof. K.C. Sharma – (Member)**
3. **Dr. Arun Chandan (Basic Medical Science)**
4. **Dr. Sachin Sharma (Clinician)**
5. **Dr. Vikesh Gupta (Clinician)**
6. **Sh. Narender Paul (NGO representative)**
7. **Sh. Anand Sharma (Legal Person)**

The Offline/Online meeting of the Institutional Ethics Committee of Central University of Himachal Pradesh (CUHP) was held on **22nd August 2022** at 11:00 AM at Conference hall, Shahpur Campus in offline mode and through Google Meet: http://meet.google.com/wqx-nfeq-tbi in online mode.

Dr. Ranjit Kumar, Member Secretary, IEC and Assistant Professor, Dept. of Animal Science (Zoology), CUHP, Dharamshala introduced all the members of the Institutional Ethics Committee (IEC). He welcomed all the members of IEC and presented details of the research activities carried out at CUHP.

Prof. Pardeep Kumar, Chairman IEC, CUHP updated members about different research activities carried out at Central University of Himachal Pradesh. He has also introduced activities of Himalayan Life Science Society (HLSS), which is running under school of Life Sciences, CUHP. He honored the members of IEC through giving mementoes of HLSS to member's present offline. He discussed with all the members about future prospects of research at CUHP.

Dr Ranjit Kumar then discussed the agenda points with the members –

Agenda 1. Research Project entitled "***In Vivo* and *In Vitro* study on synergistic effect of medicinal plants in breast cancer of mice" sanctioned to Dr Ranjit Kumar (Principal Investigator), Dr Sunil Kumar & Dr Rakesh Kumar (Co-Investigator) from National Medicinal Plant Board, Govt. of India in Department of Animal Sciences, Central University of Himachal Pradesh, Dharamshala. The Budget amount of Project is **Rs. 40, 10,229/-** only

Abstract of Research Work: Cancer is becoming a high profile disease in developed and developing worlds. Amongst the non-communicable diseases, cancer is the second leading cause of death, after cardiovascular disease. Therefore, the demand for a cure and the prevention of cancer is extremely high. We will analyse *In Vivo* and *In Vitro* synergistic effect of *Withania somnifera*, *Curcuma longa*, *Emblica officinale* and *Ocimum sanctum* against breast cancer of mice on different combination to find out effective synergistic effect of these medicinal plants against breast cancer of mice. Also the study of micronuclear assay and chromosomal study in breast cancer by four selected plant extract treated group of mice will be analysed and *In Vitro* synergistic impact of the plants against breast cancer cells of mice will be studied. The analysis of results will be done by histological parameters, biochemical analysis, hormonal analysis and DNA fragmentation assay study. This study will be helpful in economizing cancer treatment.

Decision: All the members convinced about importance of this research work and Approved this research study. Maximum 150 mice may be used for study.

Agenda 2.Ethical approval of PhD synopsis of RD scholars of School of Life, CUHP.

2.1 **"PRODUCTION OF HIGH VALUE BIOACTIVE COMPOUNDS BY *RHIZOBIUM RHIZOGENES* MEDIATED HAIRY ROOTS OF *BERGENIA CILIATE*"** by **Shilpa** (CUHP20RDPLS07) under supervision of **Dr. Munish Sharma**

Abstract of Research Work: Urolithiasis is affecting humans since long ago. This disease is extremely painful and can lead to serious problems including severe renal failure. Synthetic drugs for this ailment exhibit various side effects. Natural or herbal therapy is effective approaches to deal with this as it is well known that nature derived products are boon to humans with almost no side effects. Hence pharmacological companies have shown an increasing interest towards herbal medicines and they directly target the natural habitat of these plants. *B. ciliata* is basically known for its anti-urolithiatic activity and is a main ingredient of various ayurvedic formulations that are recommended for kidney stones. Bergenin is the marker compound of this plant and is responsible for major bioactivities. Natural population of *B.ciliata* is declining day by day. Thus a potential alternative approach is required that can not only fulfill the demand but can also help to save the natural population of this plant. To combat these issues, this study aims to adopt biotechnological approach i.e., hairy root culture. Hairy root culture is an advanced tissue culture approach that not only is genetically and biochemically stable, but provide enhanced amount of secondary metabolites in comparison to naturally grown plants. This study aims to develop a protocol for the production of hairy roots in *Bergenia ciliata* as well as to explore the effective approaches to increase the biomass along with the content of active therapeutic compounds.

Decision: Approved for research study since no involvement of animals are there in research work.

2.2 **"LIMNOLOGICAL STUDIES AND ECOLOGY OF BANER, THE TRIBUTARY OF BEAS RIVER, IN HIMACHAL PRADESH, INDIA"** by **Bhavna** (CUHP20RDANS01) under supervision of **Dr. Rakesh Kumar**

Abstract of Research Work: Freshwater habitats are the richest source of biodiversity in the world, the river amongst these being vital, vibrant source of biodiversity. The continuous decline in Earth's biodiversity represents a major crisis and challenge for the 21st century. On a global scale, aquatic biodiversity is vanishing faster than terrestrial biodiversity. To conserve these valuable resources from further deterioration there is a need of regular monitoring of the aquatic ecosystem as all conservation efforts to save biodiversity depend upon the knowledge of species diversity. A comprehensive biomonitoring involves both physiochemical and biological approach. Latest trend in biomonitoring the ecology of aquatic system is metagenomics through e -DNA (environmental DNA).Ironically very little attention has been paid on rivers of Himachal Pradesh. Till present there are no Metagenomics studies of fresh water rivers in Himachal. Hence proposed study is an honest effort to bridge the gap. So, objectives of the study will be the study of physicochemical parameters, fish fauna, phytoplankton and zooplankton by morphological and Metagenomics approach, correlation between physicochemical parameters and planktons. For studying all the parameters, sampling will be done on monthly basis for the period of two years on the four selected sites of Baner River. The findings will be helpful for in-depth knowledge of biodiversity and basis for further research and analysis of hydrology of river. Water quality reports will be shared with IPH department and general public as the water of Baner has been lifted by IPH department for irrigation and drinking purposes.

Decision: Approved for research study.

2.3**"ISOLATION AND CHARACTERISATION OF NOVEL HIGH ALTITUDE LACTIC ACID BACTERIA FOR THEIR CADMIUM REMOVAL POTENTIAL FROM WATER"** by **Disha Chauhan** (CUHP20RDANS02) under supervision of **Dr. Ranjit Kumar**

Abstract of Research Work: Heavy metals like Cadmium deteriorate the environment and pose a serious threat to health. Cadmium is a highly toxic metal. Increase in industrialization has raised the levels of Cadmium in water. In order to tackle this problem, many strategies were developed but they are costly and insufficient. Bioremediation using lactic acid bacteria (LAB) offers an economical solution for detoxifying heavy metals. The objectives of the study are Isolation of lactic acid bacteria from high altitude source. Morphological and Biochemical characterization of the bacterial isolates and Evaluation of Cadmium removal efficacy of the bacterial isolates in water. In this work, lactic acid bacteria will be assessed for their ability to remove Cadmium from water. Bacterial strains will be isolated from high altitude sources and characterized using morphological as well as biochemical tests. The effect of LAB on Cadmium removal in different groups will be studied through graded experimentation. This research will be beneficial in places with significant cadmium pollution in surface and ground water. It will provide a thorough picture of the quantitative removal of cadmium from water. After knowing Cadmium removal potential of selected bacteria, new technology can be designed for Cadmium removal. It will definitely reduce Cadmium induced health hazards in populations.

Decision: Approved for research study.

2.4 **"TO STUDY GROUNDWATER AND FOOD ARSENIC CONTAMINATION IN THE KANGRA, HAMIRPUR, KULLU AND MANDI DISTRICTS OF HIMACHAL PRADESH AND ITS ASSOCIATED HEALTH EFFECT"** by **Geetika** (CUHP20RDANS03) under supervision of **Dr. Ranjit Kumar**

Abstract of Research Work: Arsenic (As) pollution (in drinking water and food) is a major public health issue, and it is a "human carcinogen" with a maximum contaminated level in drinking water of 0.01ppm. Because rivers flowing from the Himalayas contain a high percentage of As, the Ganga-Brahmaputra- Meghana region of India is severely As-contaminated. Because many Beas tributaries originate in the Himalayan region and may carry As pollution. There is a possibility of groundwater As contamination. however despite these reports, very little investigation on groundwater and food As contamination

has been done in Himachal till date. Much research has been done on the health implications of arsenic exposure from rice consumption, but little is known about exposure from wheat-based food consumption, particularly in India. In comparison to food contamination, it is easier to implement remedial measures for arsenic contamination in groundwater since this food is provided to arsenic-free areas and urban areas. This work is designed to investigate As contamination in drinking water as well as food contamination (rice and wheat) in order to prevent As-induced toxicity on human health, as well as to study pH, TDS, depth, and GPS of groundwater in order to assess water quality and determine its relationship to total As concentration. This work is intended to assess groundwater quality in the Kangra, Kullu, Mandi, and Hamirpur districts of Himachal Pradesh. This investigation will also include a questionnaire-based survey to measure the amount of toxicity and any health outcomes of the people who live there.

Decision: Approved for research study since there is no involvement of animals.

2.5 **"GREEN SYNTHESIS OF NANOPARTICLES AND THEIR NEMATICIDAL EFFICACY AGAINST CITRUS NEMATODE (TYLENCHULUS SEMIPENETRANS)"** by Jigmet Yangchan (CUHP20RDANS04) under supervision of Dr. Sunil Kumar

Abstract of Research Work: Citrus (Family: Rutaceae) is the third most important fruit crop after mango and banana in India. Citrus fruits are rich in source of vitamin C, A, and phosphorus. Several Plant parasitic nematodes have been found in the rhizosphere which retarded the growth of the plant and lead to various deformities, among them the *Tylenchulus semipenetrans* is one of the most prominent parasites distributed globally where citrus is grown causing slow decline disease of the plant. In recent years, research on novel nematicides has gained interest to reduce world crop losses caused by plant parasitic nematodes. Nanotechnology is emerging as a promising alternative in nematode control, especially, the green synthesis method. The objectives of the study are to study the occurrence and distribution of citrus nematode from the major citrus growing area of Himachal Pradesh, the Synthesis of green metallic nanoparticles and their characterization,

and to evaluate the bio-efficacy of green synthesized nanoparticles on egg hatching and mortality of JuvenileII of the nematodes. Green synthesized nanoparticles may provide a better alternative to chemical nematicides used against plant parasitic nematodes. It will enhance the management of citrus parasitic nematodes. It can be cost-effective, non-toxic, and eco-friendly. In turn, helps in increasing the yield of the plant.

Decision: Approved for research study since it involve insect study and involve associated no ethical issues.

2.6 PhD Synopsis on **"EVALUATION OF GREEN SYNTHESIZED NANOPARTICLES AGAINST MELOIDOGYNE *INCOGNITA* IN TOMATO"** by **Kanika Choudhary** (CUHP20RDANS05) under supervision of **Dr. Sunil Kumar**

Abstract of Research Work: Root-knot nematodes species pose a significant threat to crop production. The direct and indirect damage caused by various *Meloidogyne* species results in delayed maturity, toppling, reduced yields and quality of crop produce, high costs of production and therefore loss of income. It destroys various beneficial crops and vegetables all over world.RKN attacked the roots of plants and results in the formation of gall. Major *Meloidogyne* species that causes large scale destructions are *M. incognita, M. javanica, M arenaria,M. haplaetc*.Tomato (*Solanum lycopersicum*) is the world's most important vegetable crop, but it is frequently attacked by *Meloidogyne* spp., limiting fruit yield quantity and quality.The objectives of this study are to check the biodiversity of *Meloidogyne* species, to synthesize nanoparticles from plant extracts and evaluation of green synthesized nanoparticles against *Meloidogyne incognita*species. On the basis of morphological characters and molecular characterization, we are able to identify particular species of *Meloidogyne*genus. Chemical control has been used to manage RKN, but they have large deleterious effect on human health and environment. Different botanicals have been used against Root-knot nematodes. Management of nematodes is difficult hence more alternative methods should be needed to eradicate this pest. The green synthesis of nanoparticles could be effective potentially and environmentally safe to control tomato

knot-root nematode. Using plant extracts for the synthesis of metal NPs is a recently growing area of interest due to its benefit in comparison to the traditional physicochemical methods.

Decision: Approved for research study since it involve insect study and involve associated no ethical issues.

2.7 **"ECO-FRIENDLY MANAGEMENT OF MAJOR MUSHROOM FLIES ASSOCIATED WITH *AGARICUS BISPORUS*"** by **Kumari Ruchika** (CUHP20RDANS06) under supervision of **Dr. Sunil Kumar**

Abstract of Research Work: *Agaricus bisporus* are most commercial producing mushroom which is used as highly nutritional food. Many type of pest can damage mushroom which can affect the nutritional value of the mushroom. Insecticide resistance among mushroom flies populations has been reported from different countries, and there is a need to determine the toxicity of currently approved and potential pesticides to sustain control of mushroom flies populations in Himachal Pradesh. The green synthesis of plant extract, silver based nanoparticles is advantageous over chemical and physical methods because it is a cost effective and environment- friendly method, where it is not necessary to use high pressure, energy, temperature, and toxic chemicals. The use of plant based nanoparticles can be advantageous over other biological processes because it eliminate the elaborate process of maintaining cell cultures and can be suitable scaled up for large scale nanoparticles synthesis. On the other hand entomopathogenic nematodes are not harmful to humans and the environment. Both *Steinernema* and *Heterorhabditis* have been proved to be effective in controlling mushroom flies. The present study investigated the toxicity of different botanicals, green synthesized nanoparticles, entomopathogenic nematodes, fungi against larvae of major mushroom flies using laboratory bioassays.

Decision: Approved for research study since it involve insect study and involve associated no ethical issues.

2.8 **"DNA BARCODING OF FISHES FROM BEAS RIVER IN HIMACHAL PRADESH"** by **Kushal Thakur** (CUHP20RDANS07) under supervision of **Dr. Rakesh Kumar**

Abstract of Research Work: Fish constitutes more than one half of the total vertebrates. India probably accounts approximately 7.7% of the world's fish species. Aquatic diversity decrease rapidly than terrestrial diversity. Some species are being hastily lost due to anthropogenic activity. To plan a conservation strategy for species. a proper identification of species is necessary. DNA barcoding emerges as a one of the efficient DNA based identification method in which a short standardized nucleotide sequence of used for the identification of species. The main aim of conducting this study is to carry out proper and authentic assessment of fish diversity both at morphological and molecular level in Beas River.Sample will be collected from distant sites of Beas river throughout the year except their breeding period. Tissue sample will be dissected from fin. preserved in 95% alcohol and store in -20 °C until further use. The specimen from each group of species will be randomly selected and will be preserving in 10% formalin for morphological identification. Morphological identification will be done with the help of taxonomic key prepared by various experts, book written by eminent taxonomist and fish base. For DNA barcoding. DNA will be extracted from fish tissue and be used as a template for COI amplification COI gene will be amplified by using universal primer. Sequencing will be done for each PCR product. Each sample sequence will be matched with Gen Bankand BOLD. Our investigation will help to identifying the threaten species of river and also aware about the impact of anthropogenic activity on fish fauna

Decision: Approved for research study.

2.9 PhD Synopsis on "STUDYING THE IMPACT OF CLIMATE CHANGE ON EPIDEMIOLOGY OF MOSQUITO BORNE DISEASES IN HIMACHAL PRADESH" by Poonam Kumari (CUHP21RDANS03) under supervision of Dr. Sunil Kumar

Abstract of Research Work: Himachal Pradesh has a wide range of climates because its altitude ranges from 350 m to 7000 m. During rainy season average temperature of the Himachal Pradesh is 20-35°C which is suitable for the spread of mosquito vectors. In 2018.

Himachal Pradesh had a dengue outbreak and in the same year 98 cases of malaria. Survey and surveillance will be performed for collecting specific data from affected sites. Taxonomic identification is essential for entomological surveys and programs to stop diseases spread by mosquitoes. The molecular characterization of a novel transgenic event is essential because it tells us about the nature of any evolutionary change. Objectives of this study are survey and surveillance of Dengue/Malaria vector to study entomology and epidemiology in Himachal Pradesh, to study the relationship between climatic parameters and the incidence of Dengue/Malaria vector and study of the genetic diversity of mosquitoes in different regions of Himachal Pradesh. Expected outcomes will be survey and surveillance gives information about how harmful a species could be and data can be used to predict how the population will change in the future. This study will check the rate of transmission of pathogens with respect to climatic factors. Genetic diversity analysis help us to know about the new species, whether the number of species increase or decrease with change in climatic conditions.

Decision: Approved for research study.

Agenda 3. Any other matter.

Decision: The members were satisfied with the ethical standard used in CUHP and approved all agenda of the meeting for research work.

Institutional Ethics Committee (IEC)
Central University of Himachal Pradesh
Dharamshala, Kangra
Institutional Ethics Committee meeting held on 22nd August 2022 at 11.00 AM.

S. No.	Name	Signature	Approved/ Not Approved
1.	Prof. Pardeep Kumar		Approved
2.	Dr. Arun Chandan		Approved
3.	Dr. Adarsh Kumar		Approved
4.	Dr. Vikesh Gupta		Approved
5.	Dr. Sachin Sharma	25/08/2022	Approved
6.	Sh. Narender Paul		Approved
7.	Dr. Rakesh Chahota	27.08.22	Approved
8.	Dr K.C.Sharma		Approved
9.	Shri Anand Sharma		Approved
10.	Dr Sunil Kumar		Approved
11.	Dr Rajender Kumar		Approved
12.	Dr. Ranjit Kumar	Ranjit 22.8.2022	Approved

Prof. Pardeep Kumar
Chairman
Institutional Ethics Committee, CUHP, Dharamshala