

7.2 Best practices of the Central University of Himachal Pradesh

Best practice – I

Title of the Practice: Research and Innovations

Objective of the Practice:

Inspired by the university vision to recognize CUHP as a 'Research University' with greater emphasis on creation of knowledge and develop an innovative idea in different fields according to Himalayan region. To establish research state-of-art research facility which is not available for the students of the region.

The Context

The Himachal state is unexplored due to its location away from major research institution in India. The main aim is to expose students and community of the region with state-of-art research and inculcate the culture of research among local and regional students. The university is aimed at providing equitable and inclusive access to multidisciplinary research for focus on quality, excellence and relevance. The Himalayan region is also exposed to number of problems like exploring avenues for energy resources from waste and nanomaterial, fisheries, mushroom culturing, water quality, natural hazards, climate changes, hence major research focus in the said fields to find out solutions in such areas and its dissemination through media of the University.

The Practice

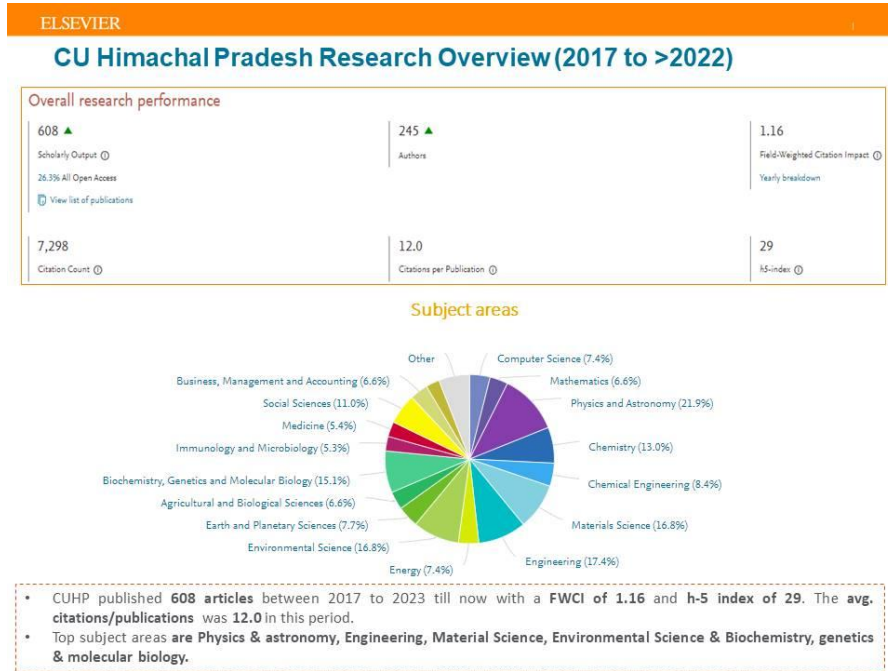
The CUHP promotes their faculty to apply for research funding outside the university. This CUHP also awards seed money for new faculty members to start their research activity. The university also offers travel grant to its faculty members and research scholars to participate in national and international conferences and workshops for sharing their research and explore new collaborations. CUHP have signed MoUs with various research organisations and have collaborations with many prestigious institutions such as Indian Space Research Organization (ISRO), Banaras Hindu University (BHU), Institute of Himalayan Bio resource Technology, South Carolina University, USA, University of Warwick, UK; John Innes Center Norwich UK; NOR SAR, Norway; Veer Surendra Sai University of Technology (VSSUT), JNU, GNDU, Wadia Institute of Himalayan Geology, Dehradun, Ministry of Earth Sciences; University of Mumbai and many CSIR Labs etc. The Director Research center help student to identify research areas and facilitate the students in finding research publication journal for their research interest.

The University has active involvement of faculty, research scholars and community. Earthquake, landslide hazard and climate change studies are such distinctive applied subjects where the extraordinary achievements and contribution by faculty members are exemplary. Area of waste management, climate change, plant genetics, mushroom culturing, fisheries, Biomass Conversion which involves conversion of unused plant biomass into value added chemicals and water purification by detecting and removing heavy metal ions from polluted water sources, nuclear research, astrophysics, fungal-fungal interaction by purification of selected interaction metabolites; artificial intelligence and machine learning is at par with the best in the world. The University has number of scientific departments which nurture core domains and collaborated with number of India and international institutions to usher in the era of research excellence.

Evidence of Success

- Having good research culture in the university more than 33% students are opting are higher education in research.
- Faculties have been awarded prestigious fellowships from international university based on their research activity in CUHP like Hum Bold Fellow, European Molecular Biology Organization (EMBO) Fellowship; Raman Fellowships; The Royal Society (London) Newton International Fellowship, John Innes Centre, Norwich UK; The Royal Society (London) Newton International Fellowship, University of Warwick
- The university has significant contribution in developing a tool to synthesize nanomaterials in large scale for energy storage as in Li batteries and Supercapacitors. It will revolutionize the industrial scale production. Supercapacitor and hybrid supercapacitor will solve the energy storage problem and lead to a clean environment and solve energy problem making India sustainable in energy needs. This brought the presence of CUHP in international research circle in the top 2% categories amongst best researcher as per the list of Stanford University.
- Best visitor innovation award 2017 for developing a prototype for conversion of plastic waste to LPG
- National Geoscience award for developing a methodology on seismic micro zonation which is now getting implemented in thirty cities of India by Ministry of earth Sciences.
- Generated 9.25 crores as sponsored project from different government organisation like DST, MoES, DBT, ICSSR, BRNS, ISRO, ICMR etc.
- Generated consultancy amount of Rs 34 lakhs for providing consultancy services to State Government and industry.
- The departments of Physical and Astronomical sciences research attracted ISRO to sign an MOU and provide financial support of 15 lakh for site characterisation and formally proposed to install 1m class telescope in CUHP campus worth Rs 40 crores for carrying out research in the field of Astronomy and space debris.
- Paper Publication in Scopus and web of science index journal during assessment period: 592

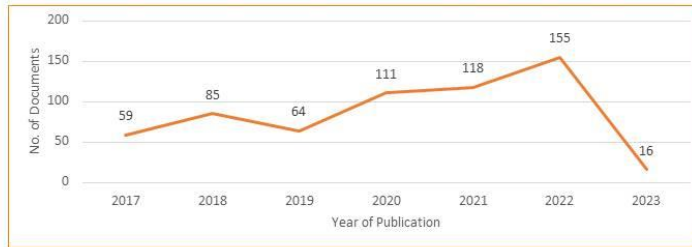
- As on today publications: 608
- H-index: 38 as per Bibliometric analysis
- Total Citation: 7298
- Collaboration with top international organisation in research : 45



Top 10 authors from CU Himachal Pradesh (2017 to >2022)

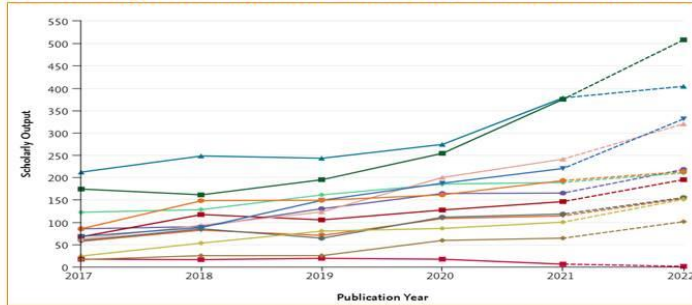
	Name	Scholarly Output	Most recent publication	Citations	h-index
1.	Singh, Rajesh Kumar	43	2023	2,798	38
2.	Kumar, Rakesh	33	2022	571	14
3.	Pant, Deepak	28	2022	273	14
4.	Akhter, Yusuf	22	2020	269	22
5.	Sood, Sandeep K.	21	2022	213	27
6.	Kumar, Jagdish	19	2023	50	8
7.	Chatterjee, Subhankar S.	19	2022	594	16
8.	Verma, Surender	19	2022	35	9
9.	Gupta, Neeraj	19	2022	103	15
10.	Mahajan, Ambrish Kumar	18	2023	193	11

Growth in number of publications from CU Himachal Pradesh (2017 to >2022)



- CUHP has increased focus on publishing more no. of documents every year.
- However, the growing research activities in CUHP are a positive sign of increased publications in years to come.
- Total no. of publications till 10th Feb 2023 is 16.

Benchmarking CU Himachal Pradesh with other Central Universities in India (2017 to >2022)



- ▲ Central University of Rajasthan
- Central University of Punjab, Bathinda
- ▼ Central University of Haryana
- ▲ Central University of Tamil Nadu
- ▲ Central University of Kerala
- ▲ Central University of Gujarat
- Central University of Jharkhand
- Central University of Jammu
- Central University of Himachal Pradesh
- ▼ Central University of South Bihar
- ▲ Central University of Karnataka
- Central University of Kashmir
- Central University of Orissa

- CUHP has a growing research trend and access to right resources will help in expediting the growth.

Content at CU Himachal Pradesh

CU Himachal Pradesh used to get access to 10 Subject collections from eSS consortium till 2017. There is no current ScienceDirect subscription. Scopus was subscribed in March 2021.

Subject Collection under eSS till 2017

Biochemistry, Genetics and Molecular Biology	Agricultural & Biological Sciences
Chemistry	Economics & Finance
Mathematics	Computer Science
Physics & Astronomy	Psychology
Social Sciences	Immunology & Microbiology

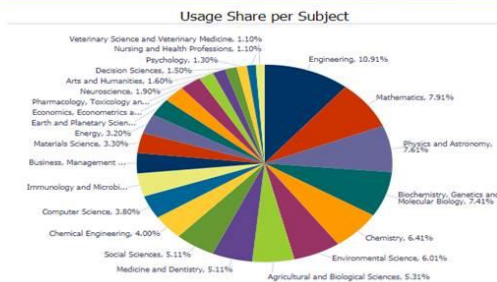
ScienceDirect Usage (2016-2017)

Month	Jan 2016	Feb 2016	Mar 2016	Apr 2016	May 2016	Jun 2016	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016	Total
Usage	1,134	1,210	1,220	1,549	1,463	866	804	1,294	1,131	892	1,044	693	13,320

Month	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Sep 2017	Oct 2017	Nov 2017	Dec 2017	Total
Usage	737	1,427	1,512	1,296	1,924	1,927	1,068	951	1,145	747	1,069	840	14,642

Total number of downloads in 2016 & 2017:
Approx. 28,000
 i.e.
47 downloads every working day
 i.e.
6 downloads every working hour

Subject Usage Share



Engineering, Mathematics, Physics & astronomy, Biochemistry, genetics & molecular biology and Chemistry subject collections were the top used subject areas

Problems encountered and resources required

The problems encountered as are follows

- Location of the campuses in rural hilly region
- Access of the quality equipment's distributors
- Easily and timely non-availability of equipment's and consumables
- Approximities from major cities and Transportation
- Technical and non-technical Man power is short due to regional constraints