

## National Mission on Himalayan Studies (NMHS)

## HIMALAYAN RESEARCH FELLOWSHIP

(FORMAT FOR THE HALF YEARLY PROGRESS REPORT)

[Reporting Period: from August, 2016 to January, 2017]

Name of the Institution/ University:	Himachal Pradesh University, Shimla
No. of Himalayan Research/Project Associate:	Two (02)
No. of Himalayan Junior Research/Project Fellows:	Five (05)

## Himalayan Research/Associate

## H-RAs Profile Description:

S. No.	Name of RA	Date of Joining	Name of the PI	Qualification
1.	Dr. Rajesh Kumar Shandil (RKS)	01.09.2016	Dr. Arvind Kumar Bhatt	M. Sc., Ph.D.
2.	Dr. Shikha Devi (SD)	15.09.2016	Dr. Arvind Kumar Bhatt	M. Sc., Ph.D.

## Progress Report: To be filled for each HRA in separate row.

RA No.	Research Objectives	Achievements	Addressed Deliverables	Location of Field Site with Details, if any
1. (RKS)	<ul style="list-style-type: none"> <li>To explore the traditionally important medicinal plants being used by herbal practitioners to cure several diseases.</li> <li>Exploring anti-microbial potential of few important medicinal and aromatic plants of Himachal Pradesh and green synthesis of silver nanoparticles of the plant extracts.</li> </ul>	<ul style="list-style-type: none"> <li>Preparation of questionnaire for the survey.</li> <li>Survey visits of Rohru, Chirgaon and Shimla MC areas.</li> <li>Collected samples of important medicinal and aromatic plants.</li> <li>Enlisted important medicinal and aromatic plants in different areas of Shimla district.</li> <li>Preparing a database of important medicinal and aromatic plants of Shimla district.</li> </ul>	<ul style="list-style-type: none"> <li>Formulation of strategy.</li> <li>Herbal alternate to tackle pathogens.</li> <li>Selection and collection of plant materials.</li> <li>Survey of relevant study areas</li> <li>Enlisted important medicinal and aromatic plants in Rohru, Chirgaon and Shimla MC areas.</li> <li>Meetings with traditional herbal practitioners.</li> </ul>	<ul style="list-style-type: none"> <li>Enlisted important medicinal and aromatic plants in Rohru, Chirgaon and Shimla MC areas.</li> <li>Meetings with different traditional health practitioners as mentioned below:</li> <li>Address 1: Rohru, District Shimla, H.P. – 171207</li> <li>Address 2: Chirgaon, District Shimla, H.P.</li> </ul>

2. (SD)	<ul style="list-style-type: none"> <li>• Microbial utilization of industrial and other wastes for production of commercially viable and useful by-products.</li> <li>• Production of commercially important products like bio-fuels, nutraceuticals, etc.</li> <li>• Efforts to develop an integrated process of waste utilization.</li> </ul>	<ul style="list-style-type: none"> <li>• Survey of study area: Lahaul Spiti &amp; Kullu.</li> <li>• Collection of soil, water and cow dung samples.</li> <li>• Isolation and screening of lignin peroxidase producing bacterial isolates.</li> </ul>	Isolation of useful microbes for the utilization of the waste.	<p>Study area: Lahaul-Spiti</p> <p>An intensive survey of the study area was done in the month of November, 2016 to collect the water, cow dung and soil samples.</p> <p>Samples were collected from Kullu as well as Lahaul-Spiti districts of Himachal Pradesh.</p>
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Note: Data, table and figures may be attached as separate source file (.docx, .xls, .jpg, .jpeg, .png, .shp, etc.).

(Detailed reports of the individual Research Fellow attached separately as annexure)

### Himalayan Junior Research/Project Fellows

#### H-JRFs Profile Description:

S. No.	Name of JRF	Date of joining	Name of PI	Qualification
1	Mr. Rajeshwer (RJ)	19.08.2016	Dr. Arvind Kumar Bhatt	M. Sc., M. Phil
2	Mr. Vishal Ahuja (VA)	19.08.2016	Dr. Arvind Kumar Bhatt	M. Sc.
3	Ms. Kalpana Thakur (KT)	19.08.2016	Dr. Arvind Kumar Bhatt	M. Sc., M. Phil
4	Ms. Mamta Devi (MD)	19.08.2016	Dr. Arvind Kumar Bhatt	M. Sc.
5	Ms. Vaishali Sharma (VS)	19.08.2016	Dr. Arvind Kumar Bhatt	M. Sc., M. Phil

Progress report: To be filled for each JRF in separate row.

JRF No.	Research Objectives	Achievements	Addressed Deliverables	Location of Field Site with Details, if any
1. (RJ)	<ul style="list-style-type: none"> <li>• Promotion of traditional/Indigenous herbal based healthcare practices with emphasis on medicinal and aromatic plants and other non-agriculture resources to improve rural economy in Himachal Pradesh.</li> <li>• Antimicrobial potential and the MIC of phytochemicals from selected plants against the certified pathogenic strains.</li> </ul>	<ul style="list-style-type: none"> <li>• Preparation of questionnaire for the survey.</li> <li>• Survey of study areas.</li> <li>• Interaction with local practitioners about various properties of medicinal plants.</li> <li>• Obtained knowledge about appropriate seasons and time for the collection of medicinal plants and their parts being used for the preparation of herbal remedies.</li> </ul>	<p>Participatory documentation of local health traditions (LHT) in Shimla.</p> <p>Process of preparation of inventory of medicinal plants duly protected from misuse.</p>	<p>Survey of the study area was done in the month of November-December, 2016 at Districts of Himachal Pradesh such as: Lahaul -Spiti, Kullu and Shimla.</p>

2. (VA)	<ul style="list-style-type: none"> <li>• Rapid assessment of selected healthcare practices prioritized by local communities, based on secondary information supplemented with primary data.</li> <li>• Design and implementation of participatory clinical trials for high priority local health practices (LHPs) in the local community.</li> </ul>	<ul style="list-style-type: none"> <li>• Preparation of questionnaire for the survey.</li> <li>• Survey of study areas.</li> <li>• Interaction with local practitioners about various properties of medicinal plants.</li> <li>• Obtaining knowledge about appropriate seasons and time for the collection of medicinal plants and their parts being used for the preparation of herbal remedies.</li> </ul>	<p>Process of documentation of traditional herbal remedies, local vaidyas, medicinal formulations and their scientific relevance in modern day healthcare.</p> <p>Assessment of selected health practices, prioritized by local communities, identification of constrains.</p>	<p>Survey of the study area was done in the months of November and December, 2016 at various areas of District Shimla such as: Rohru, Chirgaon, Sanjoui, Tutu and Shimla city area</p>
3. (KT)	<ul style="list-style-type: none"> <li>• Promotion via a participatory process, of sound LHPs, in the community, in order to enhance health security of rural communities.</li> <li>• To explore the traditionally important medicinal plants being used by herbal practitioners to cure several diseases.</li> <li>• Phytochemical analysis, purification of bioactive components from extract.</li> </ul>	<ul style="list-style-type: none"> <li>• Preparation of questionnaire for the survey.</li> <li>• Survey of study area Kangra.</li> <li>• Interaction with local practitioners about various properties of medicinal plants for specific remedies.</li> <li>• Collected information about appropriate seasons and time for the collection of medicinal plants and their parts being used for the preparation of herbal remedies.</li> </ul>	<p>A participatory process, of sound LHPs, in the community and to examine success stories in the production and marketing of herbs, medicinal and aromatic plants.</p>	<p>Survey of the study area was done in the month of October, 2016 at various villages of District Kangra such as: Dari, Khera, Dharaman and Thakurdwara.</p>
4. (MD)	<ul style="list-style-type: none"> <li>• Exploring antimicrobial potential of few important Microbial and aromatic plants of Himachal Pradesh and green synthesis of silver nanoparticles of the plant extracts.</li> <li>• Phytochemical analysis, purification of bioactive components from extracts</li> <li>• Green synthesis of nanoparticles (Ag and Fe) and their characterization using UV-visible</li> </ul>	<ul style="list-style-type: none"> <li>• Preparation of questionnaire for the survey.</li> <li>• Survey of study area Solan district.</li> <li>• Interaction with local herbal practitioners about various properties of medicinal plants for curing several health disorders.</li> <li>• Obtained knowledge about appropriate seasons and time for</li> </ul>	<p>Formulation of strategy.</p> <p>Herbal alternate to tackle pathogens, selection and collection of plant material.</p>	<p>Study area: Solan.</p> <p>An intensive survey of the study area was done in the month of October, 2016 to collect the samples.</p> <p>Samples were collected from different villages of Solan districts of Himachal Pradesh i.e. Swarghat, Nand, Janon and Khruni</p>


	spectroscopy, X-ray diffraction, Atomic force microscopy, FTIR analysis, SEM/TEM, etc.	the collection of medicinal plants and their parts being used for the preparation of herbal remedies		
5. (VS)	<ul style="list-style-type: none"> <li>Microbial utilization of industrial and other wastes for production of commercially viable and useful by-products like bio-fuels, nutraceuticals, etc.</li> <li>Efforts to develop an integrated process of waste utilization.</li> </ul>	<ul style="list-style-type: none"> <li>Survey of study area: Lahaul Spiti, Kullu.</li> <li>Collection of soil, water and cow dung samples</li> <li>Isolation and screening of potential cellulase producing bacteria.</li> </ul>	Isolation of useful microbes for the utilization of the waste.	<p>Study area: Lahaul-Spiti</p> <p>An intensive survey of the study area was done in the month of November, 2016 to collect the water, cow dung and soil samples.</p> <p>Samples were collected from Kullu as well as Lahaul-Spiti districts of Himachal Pradesh.</p>

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*(Detailed reports of the individual Research Fellow attached separately as annexure)*

  
 Project Coordinator-cum-PI  
 NMHS-MOEF & CC (GBPIHED)  
 Department of Biotechnology  
 Himachal Pradesh University  
 Shimla - 171005, India

(Signature of Regularly Head of Department)

  
 H.P. University,  
 Shimla-171005

**Report (hard copy) should be submitted to:**

The Nodal Officer, NMHS-PMU  
 G.B. Pant National Institute of Himalayan Environment and Sustainable Development  
 Kosi-Katarmal 263 643, Almora, Uttarakhand

**Report (soft copy) should be submitted to:**

E-mail: nmhspmu2016@gmail.com