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Summer Field School [Online] on
MOUNTAIN ECOSYSTEMS AND RESOURCE MANAGEMENT
Ivano-Frankivsk Region, Ukraine :: 19-28 September, 2021

DELEGATE PARTICIPANT'S PROFILE

	**Ms. Pamela Bhattacharya** *Ph.D. Scholar* Department of Habitat Ecology Wildlife Institute of India, Dehradun Chandrabani, Dehradun 248001 Mobile: +919917649129 Email: bhattacharya.pamela8313@gmail.com
Highest Education	M. Sc. (Life Science and Biotechnology)
Personal Statement	I would like to introduce myself as a Ph. D. scholar at Wildlife Institute of India, Dehradun. My research focuses on understanding the impacts of climate change on high-altitude alpine soil bacterial communities of the Himalaya. After completing my graduation in Chemistry, I developed a keen interest in understanding chemical processes in living organisms, which motivated me to pursued my master's in Life science and Biotechnology. Since then, I have been fascinated by the life processes of micro-organisms that sustain life in extreme environments. I have worked on different projects that allowed me to investigate microbial species that can survive in various habitats ranging from hot springs to high altitude mountain ecosystems. During my current research work, I got the chance to travel to the high-altitude regions of the Himalaya and assess the impacts of climate change on soil microbial communities through field warming experiments and metagenomics. I have published five manuscripts in renowned peer-reviewed journals, and my research interests include climate change impacts assessment, soil microbial communities, and

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	biogeochemical cycles. I am glad to participate in the forthcoming Summer School on 'Mountain Ecosystems and Resource Management' and hope to advance my knowledge of the mountain ecosystem.
Paper/Presentation Title (Unpublished Research or Review or Field Work)	*Experimental Warming Impacts on Soil Bacterial Community in an Alpine Meadow, Western Himalaya*
Keywords	Climate change; Soil bacterial community; Meta-barcoding; Biogeochemical cycles; Alpine habitat of Himalaya
Abstract (100-300 words)	High altitude mountain ecosystems are predicted to experience more temperature increase than global average surface temperature rise at the end of 2100. Soil bacterial communities can provide feedback to climate warming due to their critical role in biogeochemical cycles that result in the emission of substantial CO_2 and other greenhouse gases. However, relatively little is known about the response of high-altitude soil bacterial communities to climate warming. Therefore, we conducted a warming experiment using an open-top chamber (OTC) over three years in an alpine meadow (4000 m) of western Himalaya to study the impacts of ~1.5 ^{o}C temperature increase on bacterial community and their functional traits associated with biogeochemical cycles. We used 16S rRNA meta-barcoding approach to determine bacterial diversity and composition and predicted meta-genome functional traits using PICRUSt. Results indicated no significant change ($p=0.8$) in bacterial richness, alpha diversity, and composition in OTCs compared to control plots. However, the relative abundance of some bacterial phyla, such as *Acidobacteria,* significantly increased. On the other hand, we found no significant variation in the relative abundance of genes involved in carbon (C) and nitrogen (N) mineralization. Overall, the results indicated that warming had little influence on the bacterial community and no effect on their functions in the studied alpine meadow. Our study provides evidence about the alpine bacterial community's

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	resistance to temperature change over the years, contributing to ecosystem functioning stability under future climate warming.
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