DR. MANISH MEHTA, SCIENTIST 'D', WIHG, DEHRADUN

Google Scholar Page: https://scholar.google.com/citations?user=FI6QrfoAAAAJ&hl=en

RESEARCH GROUP: GEOMORPHOLOGY AND ENVIRONMENTAL GEOLOGY

FIELD OF SPECIALIZATION:

GLACIOLOGY

EDUCATION:

Details of educational qualifications starting from the most recent ones.

M.Sc (Geology), 1999, HNB Garhwal University
PhD. (Geology), 2006, HNB Garhwal University

PROFESSIONAL EXPERIENCE:

Details of professional experience starting from the most recent position.
Scientist "D" at Wadia Institute of Himalayan Geology, Dehradun 2018 to till date
Scientist "C" at Wadia Institute of Himalayan Geology, Dehradun 2014 to 2018
Scientist "B" at Centre for Glaciology, WIHG, Dehradun 2012 to 2014
Research Associate at Centre for Glaciology, WIHG, Dehradun 2011 to 2012
Research Associate at Wadia Institute of Himalayan Geology, Dehradun 2007 to 2011
Part time Lecturer at Hemawti Nandan Bahuguna Garhwal University, Srinagar, Garhwal 2006 to 2007
JRF/SRF at Hemawti Nandan Bahuguna Garhwal University, Srinagar, Garhwal, 2001 to 2006.
Field Geologist at Jai- Prakesh Industries in Vishnu Prayag Project Joshimath Chamoli, 2000 to 2001

VISITING POSITIONS:

NIL

Teaching Experience:
01 Year Part time Lecturer at Hemawti Nandan Bahuguna Garhwal University, Srinagar, Garhwal 2006 to 2007

SERVICES:

a. Supervision/Guidance to Ph.D. Students: NIL

b. Training:

i). Training course in **"Basic Remote sensing, GIS and Eradas Image processing"** Sponsored by Indian Space Research Organization Conduct by Regional Remote Sensing Services Center, Dehradun, India, during 31 Jun to 11Feb 2005.

ii). 6th Training Course in **Glaciology** Sponsored by DST and organized Geological Survey of India Training Institute at Lucknow, Manali, Chattru and Hamta Glacier from 26th Aug to 20 Sep, 2007.

iii) Pre Conference Training Programm on "**Geomatics in Disaster Management**" conducted during February 02-03, 2009 at IIRS campus, Dehradun.

iv) Post Conference Training Programm on **"Snow Characterization workshop-2009"** held at SASE Manali during 13th-15th April 2009.

v) Regional Consultative Workshop cum Hand-on Training on '**Mapping and Inventory of Glacier Using Remote Sensing Data and Techniques**' organized by the International Center for Integrated Mountain Development (ICIMOD), Kathmandu, Nepal from 3 to 7 August 2009.

vi) **TPE Training Course & TiP/ ITP Young Scientists Program**, Kathmandu Nepal organized by Institute of Tibetan Plateau Research Chinese Academy of Science, Oct 31 to Nov 14, 2011.

c. Teaching:

i) 01 Year Part time Lecturer at Hemawti Nandan Bahuguna Garhwal University, Srinagar, Garhwal 2006 to 2007.

ii) 12-hours (in a year) school teaching since 2015 (certificate submitted to the office)

d. Membership:

1) Glaciological Society of India
2) Journal of Himalayan Geology
3) Indian Meteorological society

e. Editorial Board: NIL

f. International/National Seminars/Workshop:

Attended 10 national and international seminar and workshop

g. External Research Fund received & Project Handled:

1- Map the Neighborhood in Uttarakhand (MANU)-Co PI

h. Member of important Committees: NIL

AWARDS/FELLOWSHIPS/HONORS/MEMORIAL LECTURES:

a. Awards/Medals/Prizes:

1. Best paper Award-2014 for the paper entitled 'Influence of debris cover on terminus retreat and mass change of Chorabari Glacier, Garhwal Region, Central Himalaya published in Journal of Glaciology, Vol 59, No. 21, pp. 961-971 (2013), authored by D.P. Dobhal**, Manish Mehta** and Deepak Srivastava.
2. Awarded by Global and Planetary Change-2015 for Review the manuscript
3. Awarded by Quaternary International-2016 for Review the manuscript
4. Awarded by Quaternary International-2017 for Review the manuscript

b. Fellowships: NIL

c. Memorial Lectures: NIL

d. Recognition/Honors: NIL

COUNTRIES VISITED:

1. NEPAL (ICICIMOD); Attending Workshop cum, training in **Glaciology 3-7 Aug. 2009**

2. NEPAL; TPE Training Course & TiP/ ITP Young Scientists Program, Kathmandu Nepal organized by Institute of Tibetan Plateau Research Chinese Academy of Science, Oct 31 to Nov 14, 2011.

NATIONAL/INTERNATIONAL (outside CSIR-NGRI) COLLABORATION: NIL

Inside WIHG Collaborator:

1- Dr. DP Dobhal; Glaciology
2- Dr. Pradeep Srivastava; Paleo glaciation.

PATENT- NIL -

SCHOLARSHIPS AWARDED, GATE- NIL

PH.D. ADVISOR: 01 (MR. PANKAJ KUMAR)

LIST OF PUBLICATIONS

(a) SCI Papers

1. Rahul Devrani, Vimal Singh, **Manish Mehta** and A. L. Ramanathan (2021) Assessing Sediment Pulse during an Extreme Hydrological Event in the Alaknanda Basin, Northwestern Himalaya, India, Journal Geological Society of India, 97, 48-54.
2. Tanuj Shukla , Vinit Kumar , **Manish Mehta** , Bahadur S. Kotlia , Meenakshi and Suraj Mal (2021) Size-dependent chemical depletion of sediments in glacial environments: a case study of Mandakini valley, central Himalaya, India, doi.org/10.1080/02626667.2021.1877706.
3. Tanuj Shukla, **Manish Mehta**, D P Dobhal, Archna Bohra, Bhanu Pratap and Anil Kumar (2020) Misinterpreting proxy data for paleoclimate signals: A reply to Srivastava and Jovane, 2020. DOI: 10.1177/0959683620950481.
4. Vinit Kumar, Tanuj Shukla, Manish **Mehta**, DP Dobhal, MPS Bisht and SK Nautiyal (2020) Glacier changes and associated climate drivers for the last three decades, Nanda Devi region, Central Himalaya, India. DOI-https://doi.org/ 10.1016/j.quaint.2020.06.017

5. Vinit Kumar , Tanuj Shukla, **Manish Mehta,** Ajai Mishra and Anil Kumar (2020) 'Chronology and climate sensitivity of the post-LGMglaciation in the Dunagiri valley, Dhauliganga basin, Central Himalaya, India': Reply to comments, Boreas, DOI 10.1111/bor.12485.
6. Vinit Kumar , Tanuj Shukla, Ajai Mishra, Anil Kumar and **Manish Mehta** (2020) Chronology and climate sensitivity of the post-LGMglaciation in the Dunagiri valley, Dhauliganga basin, Central Himalaya, India, Boreas. Vol. 49, pp. 594–614. DOI 10.1111/bor.12440.
7. Aparna Shukla, Sidhi Garg, **Manish Mehta**, Kumar V, and Shukla U K (2020) Temporal inventory of glaciers in the Suru sub-basin, western Himalaya: impacts of regional climate variability. Earth Syst. Sci. Data, 12, 1245–1265.
8. Tanuj Shukla, **Manish Mehta**, D P Dobhal, Archna Bohra, Bhanu Pratap and Anil Kumar (2020) Late-Holocene climate response and glacial fluctuations revealed by sediment record of monsoon-dominated Chorabari Lake, Central Himalaya, The Holocene, Vol. 30(7) 953– 965. DOI: 10.1177/095968362090 8654.
9. Shukla A, Garg S, **Mehta M**, Kumar V, and Shukla U K (2019) Temporal inventory of glaciers in the Suru sub-basin, western Himalaya: Impacts of the regional climate variability. DOI https://doi.org/10.5194/essd-2019-122
10. Garg S, Shukla A, **Mehta M**, Kumar V, and Shukla U K (2019) On geomorphic manifestations and glaciation history of the Kangriz glacier, western Himalaya. Himalayan Geology, Vol. 40 (2), 2019, pp. 115 127,
11. Tanuj Shukla, Shipika Sundriyal, Lukasz Stachnik, **Manish Mehta** (2019) Carbonate and silicate weathering in glacial environments and its relation to atmospheric CO^2 cycling in the Himalaya. Annals of Glaciology. doi: 10.1017/aog.2019.5. (Online)

12. Suraj Mal, **Manish Mehta**, RB Singh, Udo Schickhoff, MPS Bisht (2019) Recession and morphological changes of the debris-covered Milam Glacier in Gori Ganga valley, Central Himalaya, India, derived from satellite data. Environmental Science. doi: 10.3389/fenvs.2019.00042. (Online)

13. Shukla, T., Kumar, V., **Mehta, M.** (2019) Response of the Himalayan glacial cycles to multiple equilibrium of climate system: A review. Quaternary International (Accepted). DOI.org/10.1016/j.quaint.2018.12.007.

14. Garg, S., Shukla, A., **Mehta, M.**, Kumar, V., Samuel, S. A., Bartarya, S. K., Shukla, U. K. (2018) Field evidences showing rapid frontal degeneration of the Kangriz glacier, western Himalayas, Jammu & Kashmir. Journal of Mountain Science.15 (06),1199–1208.

15. Tanuj Shukla, **Manish Mehta**, Manoj K. Jaiswal, Pradeep Srivastava, D.P. Dobhal, H.C. Nainwal, Atul K. Singh (2018) Late Quaternary glaciation history of monsoon-dominated Dingad basin, central Himalaya, India, ***Quaternary Science Reviews, 181, 43-64.***

16. Tanuj Shukla, **Manish Mehta**, Vipin Kumar, H.C. Nainwal, D.P. Dobhal (2017) Application of the Schmidt-hammer with relative age dating of moraine boulders- a case study from Mandakini River valley, Central Himalaya India, Himalayan Geology 38 (2), 184-192.

17. Rakesh Bhambri, **Manish Mehta**, Shweta Singh, R. Jayangonda Perumal, Anil Kumar Gupta, Pradeep Srivastava (2017): Landslide Inventory and damage assessment in the Bhagirathi Valley, Uttarakhand, during June 2013 flood, Himalayan Geology 38 (2), 193-205.
18. Vinit Kumar, **Manish Mehta**, Ajai Mishra, Anjali Trivedi (2017) Temporal fluctuations and frontal area change of Bangni and Dunagiri glaciers from 1962 to 2013, Dhauliganga Basin, central Himalaya, India, ***Geomorphology***, 284, 88-98.

19. **Manish Mehta,** Tanuj Shukla, Rakesh Bhambri, Anil Kumar Gupta, D P Dobhal (2017). Terrain changes, caused by the 15–17 June 2013 heavy rainfall in the Garhwal Himalaya, India: A case study of Alaknanda and Mandakini basins, ***Geomorphology***, 284, 53-71.

20. Indira Karakoti, Kesarwani, K., **Manish Mehta**, Dobhal, D. P. (2017) Modelling of meteorological parameters for the Chorabari Glacier valley, Central Himalaya, India, Current Science, 112 (7), 1553-1560

21. Rakesh Bhambri, **Manish Mehta,** D.P. Dobhal, Anil Kumar Gupta, Bhanu Pratap, Kapil Kesarwani, Akshaya Verma (2016). Devastation in the Kedarnath (Mandakini) Valley, Garhwal Himalaya during 16th-17th June, 2013: A remote sensing and ground based assessment. ***Natural Hazard***. 80, 1801-1822.
22. Indira Karakoti, Kesarwani, K., **Manish Mehta,** Dobhal, D. P. (2016), Extended T-index models for glacier surface melting: a case study from Chorabari Glacier, Central Himalaya, India. Theoretical and Applied Climatology. DOI 10.1007/s00704-016-1753-6.
23. Bhanu Pratap, D.P. Dobhal, Rakesh Bhambri**, Manish Mehta** and V.C. Tewari (2016). Four Decades of Glacier Mass balance Observations in Indian Himalaya. **Regional Environment Change. 16, 643-658.**
24. Bhanu Pratap, D.P. Dobhal, **Manish Mehta**, Rakesh Bhambri (2015). Influence of debris cover and altitude on glacier surface melting: A case study on Dokriani Glacier, Central Himalaya, India. ***Annals of Glaciology,*** 56 (70), 9-16.
25. Kapil Kesarwani, D.P. Dobhal, Alok Durgapal, **Manish Mehta** (2015) High altitude meteorology and cloud cover condition; A case study from the Chorabari Glacier catchment, Central Himalaya, India. Himalayan Geology, 36 (2), 134-142.
26. **Manish Mehta,** D.P. Dobhal, Bhanu Pratap, Zahid Majid, Anil K. Gupta and Pradeep Srivastava (2014). Late Quaternary glacial advances in the Tons River Valley, Garhwal Himalaya, India and regional synchronicity. ***The Holocene***, 24 (10), 1336-1350.

27. **Manish Mehta**, D. P. Dobhal, Kapil Kesarwani, Bhanu Pratap, Amit Kumar and Akshya Verma (2014). Monitoring of glacier changes and response time in Chorabari Glacier, Central Himalaya, Garhwal, India. ***Current Science*** Vol. 107 (2), 281-289.

28. D.P. Dobhal, Anil K. Gupta, **Manish Mehta** and D.D. Khandewal (2013) Kedarnath Disaster: Facts and Plausible Causes, ***Current Science***, 105 (2) 171-174.
29. D.P. Dobhal, **Manish Mehta** and Deepak Srivastava (2013), Influence of debris cover on terminus retreat and mass changes of Chorabari Glacier, Garhwal region Central Himalaya, India. ***Journal of Glaciology,*** 59 (217) DOI: 10.3189/2013JoG12j180.
30. Pratap, B., Dobhal, D.P., Bhambri, R., **Manish Mehta,** (2013). Near-surface temperature lapse rate in Dokriani Glacier catchment, Garhwal Himalaya, India. ***Himalayan Geology***, 34 (2), 183-186.
31. Amit Kumar, Akshaya Verma, D.P Dobhal, **Manish Mehta** and Kapil Kesarwani (2012): Climatic Control on Extreme Sediment Transfer from Dokriani Glacier during Monsoon, Garhwal Himalaya. ***J. Earth Syst. Sci.*** 123 (1), 109-120.

32. **Manish Mehta,** D.P. Dobhal, Bhanu Pratap, Akshya Verma, Amit Kumar, and Deepak Srivastava (2012). Glacier changes in Upper Tons River basin, Garhwal Himalaya, Uttarakhand, India. ***Zeitschrift für Geomorphologie,*** 57 (2), 225-244**.**
33. **Manish Mehta,** Majeed, Z., Dobhal, D. P., Dobhal, D. and Srivastave, P. (2012). Glaciation in Mandakini valley with special reference to Chorabari Glacier, Central Himalaya, India. ***Jounral of Earth System Science*** 121 (1) 149-163.

34. **Manish Mehta,** Dobhal D P and Bisht M P S (2011) Change of Tipra Glacier in the Garhwal Himalaya, India, between 1962 and 2008. ***Progress in Physical Geography*** 35 (6) 721-738.
35. **Manish Mehta,** Dobhal D.P and Bisht M.P.S. (2011) Avalanche morphometry and hazards potential assessment in Laxman Ganga Catchment (en-route of Hemkund Sahib) Garhwal Himalaya, ***Himalayan Geology*** vol.32, (2) 159-167.

36. Dobhal, D.P., and **Manish Mehta** (2010) Surface morphology, elevation change and terminus retreat of Dokriani Glacier, Garhwal Himalaya: Implication for climate Change, ***Himalayan Geology*** Vol. 31, 71-78.

37. Dobhal, D.P., and **Manish Mehta** (2008) Snout fluctuation of Dokriani Glacier (1962-2007) vis-à-vis the impact of climate changes. ***Himalayan Geology***, Vol. 29 (3), 23-25.
38. Bisht, M.P.S., **Manish Mehta,** And Nautiyal, S.K. (2006); Geomorphic Hazards around Badrinath (Uttaranchal), and Control Measures, ***Himalayan Geology,*** Vol. 27 (1), 2005, pp.73-80.

(b) Non-SCI Articles

1) Dobhal, D.P., and **Mehta, M.,** (2011), Shrinking Himalayan Glaciers and its impacts on environment, Mountain Resource Management (Application of Remote Sensing and GIS) 111-128.

2) Bisht, M.P.S., **Mehta, M.,** And Nautiyal, S.K. (2011) Impact of Depleting Glacier on the Himalaya Biosphere Reserve – A case study of Nanda Devi Biosphere Reserve, Uttarakhand Himalay Mountain Resource Management (Application of Remote Sensing and GIS) 17-31.

3) Kesarwani K., Pratap B., Bhambri R., **Mehta M.,** Kumar A., Karakoti I., Verma A. and Dobhal D. P. (2012). Meteorological observations at Chorabari and Dokriani Glaciers, Garhwal Himalay, India. Journal of Indian Geological Congress, Vol 4 **(1)**, 125- 128.

4) Kapil Kesarwani, D.P. Dobhal, Alok Durgapal, Indira Karakoti and **Manish Mehta** (2014). Surface Energy and Mass Balance on the Ablation Zone of Chorabari Glacier, Central Himalaya, India, IAMG2014 Conference, 1-4.

5) D.P. Dobhal, **Manish Mehta**, Kapil Kesarwani, Anil K Gupta (2014) Consequence of instability processes triggered by heavy rainfall in Mandakini valley, Central Himalaya India. Proceeding of the National Seminar on Uttarakhand Disaster, ISBN- 978-81-86844-58-8. 20-34.

6) Kapil Kesarwani, D.P. Dobhal, Jaya Singh, Ajay Gairola, Farjana Birajdar, Manish Mehta, Indira Karakoti, Alok Durgapa (2016). Wind Induced Climate and Its Influence on the surface ablation of the debris-covered glaciers. Journal of Wind and Engineering, Vol. 1 (1), 158-166.

(c) Chapter in Books

1) Dobhal, D.P., Chaujar, R. K. and **Mehta, M.,** (2010), Glaciers of Bhagirathi river basin Garhwal Himalaya and their distribution in space, in book; Climate Change, (Ed., S., Saikia), 441-459.

2) **Manish Mehta,** D. P. Dobhal , Tanuj Shukla , and Anil K. Gupta (2016) Instability Processes Triggered by Heavy Rain in the Garhwal Region, Uttarakhand, India. Springer International Publishing Switzerland, R.B. Singh et al. (eds.), Climate Change, Glacier Response, and Vegetation, 219-234.

3) **Manish Mehta,** Rakesh Bhambri, J. Perumal, Pradeep Srivastava, Anil Kumar Gupta (2017), Uttarakhand Calamity: A Climate Revelation in the Bhagirathi River Valley Uttarakhand India. Springer International Publishing Switzerland, Indrajit Pal, Rajib Shaw (eds), Disaster Risk Governance in India and Cross Cutting Issues, 193-207.

4) Shukla, A., Garg, S., **Mehta, M**., Kumar, V., and Shukla, U. K., (**2017**) Sensitivity of glaciers in part of the Suru basin, western Himalaya to ongoing climatic perturbations. *In Himalayan Weather and Climate and its Impact on the Environment, (Dimri, A. P., (eds))*, Springer publication.

(d) Books-authored/Edited volume:

1) Rakesh Bhambri, **Manish Mehta,** D.P. Dobhal, Anil K Gupta (2015) Glacier Lake Inventory of Uttarakhand. Pp 78.
2) Edited volume of Himalayan Geology "Present status, advancement and challenges in Himalayan Geology (Guest Editors; Aparna Shukla, **Manish Mehta** and Gautam Rawat), pp 238.

(e) Abstract volume:

1) Kesarwani K, Pratap B, **Mehta M**, Bhambri R and Dobhal D P (2013). Temporal and Spatial Changes in Himalayan Glaciers - Impact of Climate Variability, HKT seminar, Kathmandu University, Nepal.

2) Kapil Kesarwani, Bhanu Pratap, Rakesh Bhambri, **Manish Mehta**, Amit Kumar, Indira Karakoti, Akshaya Verma and D.P. Dobhal (2013). Meteorological observations at Chorabari and Dokriani glaciers, Garhwal Himalaya, India, Green Earth, WIHG.

3) D P Dobhal, **Mehta M,** Bhanu Pratap (2012) Recent changes and mass balance trend of Chorabari Glacier, Central Himalaya, India, International Symposium on Cryosphere and Climate Change, Manali India

4) **Mehta M,** D P Dobhal, Prdeep Srivastava, Bhanu Pratap, Deepak Srivastava (2012) OSL dating of Tons valley moraines and post LGM glacial advances in Himalaya International Symposium on Cryosphere and Climate Change, Manali India

5) **Mehta, M.** and Dobhal, D.P., (2011), Millennial Scale Glaciation and Equilibrium Line Altitudes change of Chorabari Glacier Garhwal Himalaya Uttarakhand India. National Seminar on Late Quaternary Geology of the Himalayan Orogen and Foreland Basin; Centre of Advance study in Geology, University of Lucknow. Lucknow. 79

6) Zahid Majeed, **Mehta, M.** and Dobhal, D.P., (2011), Timing Of Past Glaciation Of Chorabari Glacier Inferred From Optical Luminescence Dating Of Glaciogenic Sediment. National Seminar on Late Quaternary Geology of the Himalayan Orogen and Foreland Basin; Centre of Advance study in Geology, University of Lucknow. Lucknow. 81.

7) Abhishek Ghoshala, D.P. Dobhal and **Mehta, M. (2011),** Newly Exposed Glacial Habitat Colonized by Abies pindrow (Silver Fir) in Dokriani Glacier, Central Himalaya India. National Conference on Landscape Restoration Processes Chalanges and opportunities. 64

8) **Mehta, M.** and Virendra Rana (2008), Causes and Characteristic of the snow avalanche of 22 June 2008, Bhyundar valley (en route to Hemkund sahib), Central Himalaya. National Seminar &

Workshop on Application of RS and GIS in the natural resources Management, Sustainability and uses, HNB Garhwal University.

9) Dobhal, D.P., and **Mehta, M.,** (2008), Snout retreat and mass balance of Chorabari Glacier- A Debris Cover Glacier Garhwal Himalaya, Int. semi. Nepal.

10) Bisht, M.P.S., **Mehta, M.,** and Nautiyal, S.K. (2007), Nandadevi Biosphere reserve and Natural Resources Management. Management Strategies for the Indian Himalaya: Development and conservation. Dept. of Geography HNB Garhwal University.

11) BISHT, M.P.S. and **Mehta, M.,** (2007), Cordyceps sobolifera, another "Yarsa Gumba" from a Himalayan Biosphere reserve India. International saminar on Topical Ecology congress. HNB Garhwal University & International Society for tropical ecology.

12) Bisht, M.P.S., **Mehta, M.,** and Nautiyal, S.K. (2005), Geomorphic feature a vantage point for wildlife tourism, in Nandadevi Biosphere reserve Himalaya, International seminar on Ecotourism planning development and protection. Dept. of Touism HNB Garhwal University.

13) **Mehta, M.,** Nautiyal, S.K, and Bisht, M.P.S., (2004), Geomorphic Evolution Valley of Flower " Uttaranchal Himalaya", National Seminar on resource Appraisal Technology application and Environmental challenge, Dept. of Geography HNB Garhwal University.

14) Nautiyal, S.K, **Mehta, M.,** and Bisht, M.P.S., (2004) Study of Geomorphic feature and wildlife habitat " A case study of Uttaranchal Himalaya" National Seminar on resource Appraisal Technology application and Environmental challenge, Dept. of Geography HNB Garhwal University.

15) Bisht, M.P.S., C. Prasad, **Mehta, M.,** and Nautiyal, S.K. (2002): Evidence of river blocked on Debris avalanche along Dhauliganga, Uttarakhand India. National seminar on center Himalaya Environment (Potential, Action and Challenge) Dept. of Geography HNB Garhwal University.

(f) Reports/Other Documents:

1) **A summary Report on Kedarnath Devastation** (2013); Submitted to Govt. of India and Uttarakhand Government.

2) Annual Progress Report "**Centre for Glaciology** (2012-2013); Submitted to Department of Science and Technology, New Delhi, India

3) An executive summary of the Project-**Map the Neighborhood in Uttarakhand (MANU),** Submitted to Department of Science and Technology, New Delhi, India

(g) Articles in Proceeding Volumes: NIL