

Curriculum Vitae of Dr. Naresh Rana

Name : **Dr. Naresh Rana**

Father's Name : Sri Avatar Singh Rana

Date of Birth : Day Month Year
10 10 1980

Present Status : **Assistant Professor**

Official Address : Department of Rural Technology
HNB Garhwal University,
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Academic Qualifications

| Degree | University | Year | Subjects | Division |
|---------|------------------------|------|----------------------------|-------------------|
| D.Phil. | HNB Garhwal University | 2014 | Geology | |
| M.Sc. | --Do-- | 2004 | Geology | I st , |
| B.Sc. | --Do-- | 2002 | Geology, Chemistry, Botany | I st , |
| NET | CSIR-UGC | 2011 | Earth Sciences | |

Title of the D. Phil. thesis: Neotectonic studies in Alaknanda Valley, Garhwal Himalaya, Uttarakhand.

Diploma- Assessment and management of Geological and climate related risk, University of Geneva, Switzerland

Extra-curricular activity: NCC 'C' Certificate

Research interests

1. Sustainable Development
2. Himalayan Tectonics
3. Remote-sensing
4. Climate change
5. Geo-hazards

6. Rural technology

Awards

- Fellowship for the Young Indian Researcher, University of Ferrara, Italy. 2009.
- Foreign Travel Grant by Dept. Of Science and Technology, Govt. Of India. 2013.
- Startup Grant for Young Scientist (DST, New Delhi). 2014.
- Best performance award: Summer Training Course for Slope Land disaster Reduction, NT University, Taipei, **Taiwan.2016.**

Invited Talks/lecture/resource person:

1. DDMA, Una, Himachal Pradesh.
2. INSPIRE Programme: HNB Garhwal University
3. DST sponsored training, Dept. of Geology, HNB Garhwal University

Current Research Projects

Co-PI in DST Project:

"Assessment of Impact of Climate Change on the Geodiversity in Uttarakhand Himalaya for five most disaster-prone Districts of Uttarakhand including vulnerability and Risk Assessment: Implication for Sustainable Development and Policy Making"

Position held

- **Project Scientist C**, National Center for Seismology, Ministry of Earth Sciences, New Delhi
- **Principal Investigator, DST Project.** Dept. Of Geology, HNB Garhwal University
Spatial and temporal changes in the incision/uplift rates during the late Quaternary in the Alaknanda and Yamuna valleys, Uttarakhand Himalaya, India.
- **Research Associate**, Dept. Of Geology, HNB Garhwal University
- **Senior Research Fellow**, Dept. Of Geology, HNB Garhwal University
- **Guest Scientist (Researcher)**, Department of Earth Sciences, University of Ferrara, Italy
- **Senior Research Fellow**, Dept. Of Geology, HNB Garhwal University

- **Junior Research Fellow**, Dept. Of Geology, HNB Garhwal University

Trainings and workshops

- National level training on “Disaster Risk Reduction and Resilience” NIDM, New Delhi.
- Training Program on Major Natural Disaster Alleviation of the Belt and Road in Chengdu, Sichuan, China.
- Summer training course for slope land disaster reduction, National Taiwan University, Taipei, Taiwan.
- Training course on ‘Evaluation, prediction and early warning for earthquake induced mountain hazards’ at Institute of mountain hazards and Environment, CAS, Chengdu, China
- Workshop on ‘Landslides in Lesser and Higher Central Garhwal Himalaya with special reference to their occurrences along Mandakini and lower Alaknanda Valleys’.HNB Garhwal University.
- Workshop on ‘Applied Statistical Methods and Data Analysis with SPSS’; HNBGU.
- Lecture workshop on 'Tectonic Geomorphology'; HNB Garhwal University.
- Field workshop on 'Quaternary setup of Arid NW Himalaya: Main Focus on Ladakh'; Ladakh, India.
- School on 'Global warming and Climate change'; Indian Institute of Tropical Meteorology, Pune, India.
- Course on Application of Geoinformatics in Disaster management; Geological Survey of India Training Institute, Hyderabad, India.
- Field workshop on Active Tectonics and Paleoseismology; Bhuj, Gujrat, India.
- Field workshop on 'Crustal Dynamics in the Godavari triple junction SE India'; Geological Survey of India Training Institute , Rajmundry, India.

List of Publications

Peer reviewed journals.

- (1) Sharma, V., Vadhawan, M., **Rana, N.**, Gahalaut, V.K. et al., 2020. A long duration non-volcanic earthquake sequence in the stable continental region of India: The Palghar swarm. *Tectonophysics* 779, <https://doi.org/10.1016/j.tecto.2020.228376>
- (2) A. D. Shukla, S. Sharma, **N. Rana**, P. Bisht, N. Juyal 2020. Optical chronology and climatic implication of glacial advances from the southern Ladakh Range, NW Himalaya, India. *Palaeog.*, *Palaeoclim.*, *Palaeoeco.* 539. <https://doi.org/10.1016/j.palaeo.2019.109505>
- (3) **N. Rana**, S. Sharma, S. Nawaz Ali, S. Singh, A. D. Shukla. 2019. Investigating the sensitivity of glaciers to climate variability since the MIS-2 in the upper Ganga catchment (Saraswati valley), Central Himalaya. *Geomorphology* 346,106854.
- (4) S. P. Sati, S. Sharma, **N. Rana**, H. Dobhal and N. Juyal. (2019). Environmental implications of Pancheshwar dam in Uttarakhand (Central Himalaya), India. *Current Science* 116, 1483-1489
- (5) Yadav, R.K., Gahalaut, V.K., Bansal, A.K., Sati, S.P., Catherine, J., Gautam, P., Kumar, K., **Rana, N.**, 2019. Strong seismic coupling underneath Garhwal–Kumaun region, NW Himalaya, India. *Earth and Planetary Science Letters* 506, 8–14.
- (6) Bhushan, R., Sati, S.P., **Rana, N.**, Shukla, A.D., Mazumdar, A.S., Juyal, N., 2017. High-resolution millennial and centennial scale Holocene monsoon variability in the Higher Central Himalayas. *Palaeogeo.*, *Palaeoclim.*, *Palaeoeco.*, <http://dx.doi.org/10.1016/j.palaeo.2017.09.032>
- (7) Srivastava, P., Kumar, A., Chaudhary, S., Meena, N., Sundriyal, Y.P., Rawat, S., **Rana, N.**, Perumal, R.J., et al., 2016. 8000-year monsoonal record from Himalaya revealing reinforcement of tropical and global climate system since mid-holocene. *Scientific Reports*.
- (8) **Rana, N.**, Sharma, S., 2017. Comment on: “Morphotectonic records of neotectonic activity in the vicinity of North Almora Thrust Zone, Central Kumaun Himalaya”, *Geomorphology* (285), 272 –286. *Geomorphology* 301, 147-152.
- (9) Gautam, P.K., Gahalaut, V.K., Prajapati, S.K., Kumar, N., Yadav, R.K., **Rana, N.**, Dabral, C.P., 2017. Continuous GPS measurements of crustal deformation in Garhwal-Kumaun. *Quaternary International* 262, 124-129.
- (10) Poonam, **Rana, N.**, Champati ray, P.K., Bisht, P., Bagri, D.S., Wasson, R.J., Sundriyal, Y. 2016. Identification of landslide-prone zones in the

geomorphically and climatically sensitive Mandakini valley, (central Himalaya), for disaster governance using the Weights of Evidence method. *Geomorphology* 284, 41-52.

- (11) Bisht, P., Ali, S.N., **Rana, N.**, Singh, S., Poonam, Sundriyal, Y.P., Bagri, D.S., Juyal, N. 2016. Pattern of Holocene glaciation in the monsoon-dominated Kosa Valley, central Himalaya, Uttarakhand, India. *Geomorphology* 284, 130-141.
- (12) Srivastava, P., Kumar, A., Chaudhary, S., Meena, N., Sundriyal, Y.P., Rawat, S., **Rana, N.**, Perumal, R.J., et al., 2016. Paleofloods records in Himalaya. *Geomorphology* 284, 17-30.
- (13) **N. Rana**, S.P. Sati, Y.P. Sundriyal, N. Juyal. 2016. Genesis and implication of soft-sediment deformation structures in high-energy fluvial deposits of the Alaknanda Valley, Garhwal Himalaya, India. *Sedimentary Geology* 344, 263–276.
- (14) **N. Rana**, Sunil Singh, Y.P. Sundriyal, N. Juyal. 2016. Interpreting the geomorphometric indices for neotectonic implications: an example of Alaknanda valley, Garhwal Himalaya, India. *Jour. Earth System Science* 125, 841–854.
- (15) Y.P. Sundriyal, A.D. Shukla, **N. Rana**, R.J. Perumal, P. Srivastava, L.S. Chamyal, S.P. Sati, N. Juyal. 2015. Terrain response to extreme rainfall event of June 2013, evidence from the Alaknanda and Mandakini river Valleys, Garhwal Himalaya, India. *Episodes* 38 (3), 119-188.
- (16) S.P. Sati, S. N. Ali, **N. Rana**, F. Bhattacharya, R. Bhushan, A.D. Shukla, Y.P. Sundriyal, N. Juyal. 2014. Timing and extent of Holocene glaciation in monsoon dominated Dunagiri valley (Bangni glacier), Central Himalaya, India. *Journal of Asian Earth Sciences* 91, 125-136.
- (17) **N. Rana**, Sunil Singh, Y.P. Sundriyal, Navin Juyal. 2013. Recent and past floods in Alaknanda valley: causes and consequences. *Current Science* 105 (9), 1209-1213.
- (18) **N. Rana**, F. Bhattacharya, N. Basavaiah, R.K. Pant, Navin Juyal., 2013. Soft sediment deformation structures and their implications for the Late Quaternary seismicity on the South Tibetan Detachment System, Central Himalaya (Uttarakhand), India. *Tectonophysics* 592, 165-175.
- (19) **N. Rana**, Y.P. Sundriyal, N. Juyal. 2012. Recent cloudburst induced landslides around Okhimath, Uttarakhand. *Current Science* 103 (12), 1389-1390.
- (20) S. P. Sati, Y.P. Sundriyal, **N. Rana**, S. Dangwal. 2011. Recent landslides in Uttarakhand: Nature's Furry or Human Folly. *Current Science* 100, 1617-1620.

- (21) N. Juyal , Y.P. Sundriyal, **N. Rana**, S. Chaudhary and A.K. Singhvi. 2010. Late Quaternary fluvial aggradation and incision in the monsoon dominated Alaknanda valley, Central Himalaya, Uttarakhand, India. *Journal of Quaternary Science* 25, 1293-1304.
- (22) A.K. Tyagi, S. Chaudhary, **N. Rana**, S.P. Sati, N. Juyal. 2009. Identifying areas of differential uplift using steepness index in the Alaknanda basin, Garhwal Himalaya, Uttarakhand. *Current Science* 97 (10), 1473-1477.
- (23) **N. Rana**, S.P. Sati, Y.P. Sundriyal, M. M. Doval, N. Juyal. 2007. Socio-economic and Environmental Implication of the Hydroelectric Project in Uttarakhand Himalaya, India. *Journal of Mountain Science* 4 (4), 344-353.
- (24) H.C. Nainwal, M. Chaudhary, **N. Rana**, B.D.S. Negi, R.S. Negi, N. Juyal and A.K. Singhvi. 2007. Chronology of the Late Quaternary Glaciation around Badrinath : Preliminary observations. *Current Science* 93 (1), 90-96.

Papers Presented in International/ National Seminars, Workshops/ Abstracts Published:

- (1) Rana, N., Nawaz Ali. S., Bisht, P., Shukla, A. D., Singh, S., Sundriyal, Y.P., Juyal, N., 2014. Preliminary optical chronology suggests early Holocene glacier expansion in monsoon dominate Saraswati valley Garhwal Himalaya. In National Conference on Himalayan Glaciology, Shimla, India.
- (2) Rana, N., Bhattacharya, F., 2013. Late Quaternary reactivation of the South Tibet Detachment System (STDS) in Central Himalaya, India: implications towards hinterland tectonics. In 28th Himalaya Karakorum Tibet Workshop and 6th International Symposium on Tibet Plateau joint Conference, 22-24 August 2013, Tubingen, Germany.
- (3) Rana, N., Ngangbam R.S., Caputo R., 2010. Morphometric and morphotectonic investigations in the Romagna Apennines: the Montone River as a case study. 29^o Convegno Nazionale GNGTS, Prato, October 26-28, 2010, Riassunti estesi, 191-195.
- (4) Rana, N., Sati, S.P., Sundriyal, Y.P., 2011. Paleoseismic studies in Alaknanda valley, Garhwal Himalaya: Observations, Limitations and inferences. In International Conference on Indian Monsoon and Himalayan Geodynamics, Dehradun, India. P.57.
- (5) Chaudhary, S., Sundriyal, Y.P., Srivastava, P., Rana, N., Sati, S.P., 2011. Tectono-climatic response of the widest valley segment of Alaknanda river in the vicinity of North Almora Thrust, Lesser Garhwal Himalaya,

- Uttarakhand, India. In International Conference on Indian Monsoon and Himalayan Geodynamics, Dehradun, India. p. 13.
- (7) Bhushan, R., Sati, S.P., Rana, N., Shukla, A.D., Juyal, N., 2011. Indian Summer Monsoon variability during the last 11000 years, a reconstruction based on lake sediment in Uttarakhand Himalaya. In International Conference on Indian Monsoon and Himalayan Geodynamics, Dehradun, India. p. 9.
- (8) Sati, S.P., Rana, N., Kumar, D., Reddy, D.V., 2009. Tectonic geomorphology as a tool for Paleoseismic studies: A Case Study of Alaknanda Valley, Uttarakhand Himalaya, India. In Second Indian Disaster Management Congress.
- (9) Rana, N., Rawat, G.S., 2008. Application of Geoinformatics in Neotectonic studies: a case study from Alaknanda valley. In National seminar on Application of the RS and GIS in natural resource management sustainability and uses. Abstract volume, Sept, 2008. 99-100.

Reviewer/Referee of the Journals:

- Geomorphology, ELSEVIER
 - Quaternary International, ELSEVIER
 - Journal of Paleogeography, ELSEVIER
 - Himalayan Geology, Wadia Institute of Himalayan Geology
 - CATENA, ELSEVIER
 - Journal of Earth System Science, SPRINGER
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