

DR. GIRISH CHANDRA JOSHI

PERSONAL DATA:

Name: Dr. Girish Chandra Joshi

Senior Consultant

Uttarakhand State Disaster Management Authority (USDMA)

Correspondence Address

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E-mail: algirish@gmail.com

Born: 24th May 1976

Nationality: Indian

Gender: Male

Marital Status: Married

EDUCATION:

2003-2009

Ph.D.

**Department of Earthquake Engineering,
Indian Institute of Technology, Roorkee, India**

Thesis: Estimation of Uncertainties in Probabilistic Seismic Hazard Analyses

2007-2008

**Post Graduate Diploma in Disaster Management (PGDDM)
Indira Gandhi National Open University (IGNOU), New Delhi**

Thesis: Seismic Vulnerability Analysis: Case Study of Mussoorie Town
(Uttarakhand, India)

2001-2003

**Masters of Technology in Earthquake Engineering,
Department of Earthquake Engineering,
Indian Institute of Technology, Roorkee, India**

Thesis: Seismic Hazard Evaluation for Microzonation

1997-2001

**Bachelor of Technology in Civil Engineering
G.B. Pant University of Agriculture and Technology Pantnagar**

1992-1996

**Bachelor of Science
Kumaon University, Almora Campus**

PROFESSIONAL EXPERTISE

Management and coordination

- Project Management in State, National & Multilateral funding agencies.
- Coordinates project implementation of all activities related to sensitisation workshops for various stakeholders in the State of Uttarakhand like administrators, Civil Engineers, Architects, Masons etc about earthquake vulnerability and possible preventive actions in substantive and financial terms.

Development and dissemination

- Of educational and training materials (IEC) related to earthquakes. Development of training modules. Delivering lectures in earthquake engineering for various target groups.

Seismic Hazard and Risk Assessment

- Working on Probabilistic Seismic Hazard and Risk Assessment using various methodologies.

PROFESSIONAL EXPERIENCE (Total Experience 15 Years 09Months)

From 08 July 2019 to Present(01 Year 02 months)

Senior Consultant, Uttarakhand State Disaster Management Authority, Government of Uttarakhand. Total Salary Rs. 1, 25,000/- (INR. One Lac twenty five thousands only)

- Senior member of Execution wing under USDMA. Working with senior officials of State, Central and Multilateral agencies.
- Formulation of disaster management strategies and policies.
- Project writing, Implementation and Execution.
- Coordination with National & International level Scientific and technical organizations.
- Working on Disaster Preparedness, Mitigation and Responses.
- Handling of various disaster at State Emergency Operation Centre (SEOC)
- Training and capacity building of Engineers, Planners and administrators
- Coordination and supervision to identify the priorities for disaster preparedness, mitigation, and disaster risk reduction through assessment of prevailing/frequent disaster risks, vulnerabilities and capacities.
- Prepare the framework of various studies and activities to be carried out under Disaster Management department.
- Review and finalise the various projects and schemes to be undertaken by department.
- Perform other duties as required by the department.

From 20 January 2014 to 07 July 2019(05 Years 06 months)

Disaster Management Specialist& Deputy Program Manager in Uttarakhand Disaster Recovery Project (World Bank Funded), Government of Uttarakhand. Total Salary as a Consultant

Rs. 1, 21,275/- (INR.One Lactwenty one thousand& two hundred seventy five only)

Providing Technical Support and overall coordination, management & execution of following components under UDRP, World Bank Funded Project:

1- Risk Assessment, Modeling and Capacity Enhancement of Uttarakhand Space Applications Centre (USAC):

This subcomponent has provided technical assistance to institutions to plan, set-up and implement a multi-hazard risk assessment of Uttarakhand. This subcomponent includes the following points:

- Development of the framework and implementation of multi-hazard risk assessment models for Uttarakhand;
- Development of a historic hazard and loss database;
- Establishment of a technical advisory group for the multi-hazard risk assessment;
- Acquisition and processing of high-resolution satellite data for risk assessment;
- Development of training of trainers courses to build sustainable risk assessment capacity;
- Development of a monitoring and evaluation framework;
- Development of tools that will allow the optimal utilization of risk information and increase the resilience of the communities and DRM capacity of the state;
- Capacity enhancement of Uttarakhand Space Application Centre.

2- Establishment of a Decision Support System (DSS):

This project entailed setting up a DSS that will integrate and analyze information from multiple sources in an integrated geo-spatial system. The system was designed to display information and provide access in a user-friendly manner. The main features of this system are as below:

- Integrated hazard monitoring
- Disaster Preparedness and Planning
- Situation awareness
- Early warning and advisory
- Relief, Response and SAR Coordination

3- River Morphology Study :

The objective of the morphological analysis is to identify vulnerable area (habitation, public or private infrastructure, agricultural land) where rivers pose threat from morphological changes from episodic events such as excessive rains, cloud bursts and large landslide in the state of Uttarakhand. It is also proposed to develop Uttarakhand River Information Management System (URMIS). Following tasks were completed under this project:

- Spot level survey works for developing cross sections along and across all the five rivers are finished.
- In Phase I of the project, 45 vulnerable reaches of the five rivers i.e. Alaknanda, Bhagirathi, Mandakini, Dhauliganga and Kali have been identified through rapid assessments made in the field and preliminary analyses of satellite and other relevant data.
- Detailed morphological studies of the rivers has been carried out in Phase II to finalize the critical vulnerable reaches and to aid the designs of the flood control and river training works or bank stabilization measures. The study was based on detailed analysis of hydrological data, hydraulic data, satellite images, and mathematical and geometrical modeling.
- Developed an operational River Morphology Model the purpose of the morphological analysis is to identify vulnerable areas (habitation, public or private infrastructure, agricultural land) where rivers pose threat from morphological changes that has resulted over a period of time.
- An Uttarakhand River Morphology Information system (URMIS) result from the morphological study was developed. The aim of URMIS is to have a better anticipation and control of the responses of the rivers and catchments to any catastrophic event and also a system to ensure timely corrective actions to minimize future devastation. URMIS will provide long term support to river training and bank protection.
- Effectiveness of existing river training and flood protection works have been evaluated, and recommendations were provided for strengthening and planning new structures as well as community based risk management measures to mitigate the adverse effects of floods.
- River protection works DPRs for 14 critical and vulnerable locations along these rivers are prepared and presently few are under execution.

4- Slope Stabilization Study:

This subcomponent includes the learning about slope stabilization from existing successful techniques, ongoing cutting edge work and research in this sector. It will also introduce appropriate technology for slope stabilization for Uttarakhand through small demonstrative works. The main objective of this project was for minimum rigorous impact of landslides on infrastructure and protects our habitation from large overflow in rivers during monsoon by treating and stabilizing active and prone slopes along with river training works. Following tasks were carried out under this subcomponent:

- Geological Mapping, River Morphological work Geotechnical investigations and Geo-morphological studies of five selected locations of landslide area in the State.
- Geophysical work was done using Electrical Resistivity Imaging, Seismic Refraction and Shear wave studies.
- Topographical survey was done using DGPS, Total station and LIDAR for all five slides
- Geological, structural and Topographical survey maps of the slides have been developed at 1:500 scale.
- Complete engineering & Geotechnical solutions for slope stabilization and river training works at toe have been obtained for all five slopes where landslides/slopes treatment was proposed.
- DPRs are prepared and presently under execution.

5- Strengthening Hydro-meteorological Network and Early Warning Systems (EWS) :

Under this project we had reviewed the existing hydro-meteorological capabilities at the State and National level, and after that developed and implemented a hydro-meteorological modernization plan for Uttarakhand. This important project has also reviewed the existing EWS, identifies gaps and established a robust; fail safe EWS in the State including optimum use of strengthened networks and facilities. After the detail discussion with various Institutions, organizations and agencies State government has established the hydromet (in-situ data) network over the Uttarakhand State. The hydromet network consist of total 176 sensors, which includes 107 Automated Weather Stations (AWS), 16 Automated Snow Gauge 28 Automated Rain Gauge and 25 Surface Field Observation (SFO). The hydromet data is available on <http://www.mausamuttarakhand.com/> on real time (15-mint interval). We are sharing hydromet data with different institutes and organisation by ftp to generating weather forecast system over the Uttarakhand state. This hydromet data can used for agriculture, tourism department, pre, during and post disaster for relief. The main objectives of this network are as given below:

- To collect real time (hydro-meteorological) data.
- To validate the forecast with this real time data.
- To generate the early weather forecast using hydromet data.
- To monitor State weather condition at real time during extreme weather.
- To strengthening the Uttarakhand state disaster management during pre-, during and post disaster phases.
- To help tourism, river morphology and hydro-meteorological field.

6- Rapid Visual Screening/Simplified Vulnerability Assessment/ Detail Vulnerability Assessment and Seismic Retrofitting of unsafe Government Buildings of Uttarakhand:

With an overall goal of increasing the State capacity to be able to respond to disasters, this project aims to ensure seismic safety of all key life line buildings and schools in Uttarakhand. Under this study total of 18,835 building units of 11,239 buildings are surveyed by RVS technique. Of these 10,496 units of 7,172 buildings are located in Zone V of Seismic Zoning Map of India. After this work seismic damageability of these buildings has evaluated for different classes of buildings and priority was fixed. SVA & DVA for 90 hospitals (150 building blocks) have been carried out and retrofitting DPRs for unsafe building units were prepared.

- Conduct a seismic vulnerability assessment of ninety (154 all blocks) health centers, in order to evaluate the current seismic performance of the buildings;
- Select cost-effective and sustainable technical solutions and state of art techniques for seismic retrofitting of the vulnerable buildings;
- Conduct a seismic analysis of the vulnerable buildings for evaluation of the improved structural performance and definition of the retrofitting strategy; and
- Prepare detailed project reports (DPR) for all buildings that require seismic retrofitting.

7- Building Regulations & Resilience in Uttarakhand:

The objective of this engagement is to provide a comprehensive review of the building regulatory framework that will form the basis for reform options in selected aspects of building code administration and implementation. Specifically, the main purpose is to analyze current gaps in laws, building/bye-laws, and land use management or “development control regulations” as well as process and resource gaps in the implementation capacity of building control agencies and provide recommendations for the all major towns and cities in Uttarakhand. A comprehensive review and analysis will cover the following aspects under this project:

- Siting / Construction/development permit process and on-site inspections.
- Overall regulatory institutional capacity competency and qualification of concerned officials.
- On-site inspections especially related to planning & safety.
- Quality control for essential facilities (e.g. hospitals, schools, fire departments, etc.)
- Awareness of key stakeholders about the need for safe building practices.

8- Strengthening of the Uttarakhand State Disaster Management Authority (USDMA) :

This will entail developing the institutional set up of the USDMA, technical enhancement of the facilities at the DMMC, training programs and regular drills for the emergency operations center staff and Disaster Management Officers at the District and State levels.

9- Strengthening Emergency Response Capacity:

This subcomponent focus on strengthening the capacity of the State's disaster response force, fire services personnel and other immediate key response agencies in responding adequately to disaster situations through better search and rescue equipment and enhanced training. Procurement of S&R equipments amounting INR 30.0 Cr has been done for SDRF and Fire & Emergency Services.

From 06 August 2012 to 17 January 2014 (01 year 06 month)

Associate Professor and Head in Department of Civil engineering THDC-Institute of Hydropower Engineering & Technology in the Pay Scale of 37,400-67000 Grade Pay 9000 as per 6th Pay commission.

- Teaching civil engineering courses.
- Setting up two laboratories (Soil and Geotechnical Engineering & Engineering Survey) in the Institute.
- Guiding projects for Final Year Students.
- Development of new course curriculum.

11 November 2005 to 31 July, 2012 (06 years 09 month)

Senior Executive (Earthquake Engineering and Town planning) in Disaster Mitigation & Management Centre (DMMC), Government of Uttarakhand in the Pay Scale of 15,600-39,100 Grade Pay-7600 as per 6th Pay commission

Highlights of responsibilities included:

- **Office Incharge** whenever **Executive Director** is not present in the office.
- Execution of various components under **UNDP** project year 2003-08.

Awareness Generation:

- **Organizer of “ State Earthquake Awareness and Safety Cell ”**
- **Nodal Officer of State for “ National Programme of Capacity Building for Engineers and Architect in Earthquake Risk Management ”**
- **Group Leader of Subcommittee working on Pilot Project for retrofitting of Schools in Uttarakhand funded by NHPC.**
- **Co-Organising Secretary of National Conference on Mass Instability and Earthquake Risk Management in Mountainous Regions:**

Challenges, Lessons Learnt and Future Strategy, June 27-28, 2008, Dehradun,

- **Coordinator of project “Training and capacity-building programme on seismic strengthening for master and local builders in India” in Uttarakhand. The project is funded by Nanyang Technological University, Singapore.**
- ✓ Formulate strategies to generate mass awareness of the Earthquake vulnerability of the concerned city and the need for mitigation measures. Development of necessary IEC and advocacy materials in the local language(s) on earthquakes, earthquake resistant constructions, and community preparedness. Designed posters on earthquakes.
- ✓ Organize and coordinate training programmes for practicing engineers, doctors, architects, builders, and Urban-Local-body (ULB) functionaries.
- ✓ Identify locally available materials and technologies in the District by resource mapping and select appropriate Earthquake resistant construction technologies for adaptation in the program. Select local masons in coordination with the local community and conduct hands-on training in earthquake resistant housing and retrofitting techniques.
- ✓ Conduct sensitization programmes for nodal agencies and resident welfare associations in the preparation of their own contingency plans.

Earthquake Preparedness and Response Plan:

- **Working as an Expert in “Hazard Safety Cell of Uttarakhand” – Body Constituted by the Order of Government of India- Ministry of Home Affairs in each State.**
- **Team member at State Level for conducting First Mock Exercise of Earthquake conducted by NDMA, Govt. of India in the State of Uttarakhand.**
- ✓ Facilitate preparation and compilation of Comprehensive earthquake preparedness plan for the District and Cities of Uttarakhand.
- ✓ Giving advice to State Government officials on various disaster related issues.

Techno-Legal Measures:

- ✓ Facilitate / Review existing codal provisions / building byelaws, advocate revisions. Review and strengthen existing enforcement mechanisms, developing systems for Audit of safe building practices.

01 July 2003 to 11, November 2005 (02 years 05 month)

Research Scholar in Department of Earthquake Engineering, IIT Roorkee. Worked in Probabilistic Seismic Hazard Analysis and Risk estimation. The work has been finally used for making detail microzonation map of Delhi. Also, worked in other projects of Department of earthquake engineering, IIT Roorkee. These projects are either of Government sponsored or foreign funded project.

LIST OF PUBLICATIONS

In Journals

1. Piyoosh Rautela, **Girish Chandra Joshi**, Shailesh Ghildiyal, “Economics of seismic safety for earthquake-prone Himalayan province of Uttarakhand in India ” Research paper, *International Journal of Disaster Resilience in the Built Environment* (Pub. Emerald), Vol.10 No.5,2019,pp.317-342 (Citation Index-0.97, Year-2019)
2. **Girish Chandra Joshi**, Piyoosh Rautela, Shailesh Ghildiyal, & Ranu Chauhan “Assessment of seismic vulnerability of health infrastructure in Uttarakhand: An earthquake prone Himalayan province of India” Research paper, *International Journal of Disaster Risk Reduction* (Pub. Elsevier) Volume 46, 2020, 1011506. (Impact factor- 2.568Year-2020)
3. Piyoosh Rautela, **Girish Chandra Joshi**, Shailesh Ghildiyal,“ Economics of seismic resilience of educational infrastructure in high earthquake hazard prone Himalayan province of Uttarakhand in India” Research paper, *International Journal of Disaster Risk Reduction* (Pub. Elsevier), <https://doi.org/10.1016/j.ijdrr.2019.101363>(Impact factor-3.034, Year-2019)
4. J.Oliver, X.S.Qin, H.Madsen, P.Rautela, **G.C.Joshi**, G.Jorgensen, “ A Probabilistic risk modelling chain for analysis of regional flood events” *Research Paper, Stochastic Environment Research and Risk Assessment*(Pub. Springer) Volume 33,pp 1057-1074.(Impact factor- 2.807, Year-2019)

5. Piyoosh Rautela, **Girish Chandra Joshi**, Bhupendra Baisora, Sushil Khanduri, Chanderkala Dhyani, Suman Ghildiyal and Ashish Rawat, "Earthquake Risk Assessment around Nainital in Uttarakhand Himalaya, India" Research Article, **Journal of Geography & Natural Disasters**, Volume 9, 2019, 1000236 (Impact Factor- 0.80, Year-2019)
6. **Girish Chandra Joshi**, Shailesh Ghildiyal, Piyoosh Rautela, "Seismic Vulnerability of lifeline buildings in Himalayan province of Uttarakhand in India" Research paper, **International Journal of Disaster Risk Reduction** (Pub. Elsevier) Volume 37, 2019, 101168. (Impact factor-3.034, Year-2019)
7. Piyoosh Rautela, **Girish Chandra Joshi**, Bhupendra Baisora, Chanderkala Dhyani, Suman Ghildiyal and Ashish Rawat, "Seismic Vulnerability of Nainital and Mussoorie, two major lesser Himalayan tourist destinations of India" Research paper, **International Journal of Disaster Risk Reduction** (Pub. Elsevier) Volume 13, 2015, pp.400-408.
8. **Girish Chandra Joshi** and M.L.Sharma, "Estimation of Peak Ground Accelerations and its Uncertainty for Northern Indian region" Research paper, **International Journal of Geotechnical Earthquake Engineering** (Pub. IGI Global) Volume 2, Issue 1, 1-19, January-June, 2011, pp. 1-20.
9. **Girish Chandra Joshi** and M.L.Sharma, "Strong Ground Motion and Uncertainties Estimation for Delhi, India" Research paper, **Natural Hazards** (Pub. Springer) Volume 59, Number 2, November, 2011, pp. 617-637. (Impact factor-1.217, Year-2009)
10. Piyoosh Rautela, **Girish Chandra Joshi**, Bhupendra Baisora and Shubham Pathak, "Seismic Vulnerability and healthcare infrastructure of Himalayan township of Mussoorie, Uttarakhand, India" Research article,

11. Piyoosh Rautela, **Girish Chandra Joshi** and Bhupendra Baisora “Seismic Vulnerability and risk in the Himalayan township of Mussoorie, Uttarakhand, India” Research communication, *Current Science*, (Pub. Indian Academy of Sciences) Volume 99, Issue 4, August 2010, pp. 521-526. (Impact factor-0.8, Year-2009)
12. **Girish Chandra Joshi** and Ratnesh Kumar, “Preliminary Seismic Vulnerability Assessment of Mussoorie Town, Uttarakhand, (India)” Research paper, *Journal of Building Appraisal* (Pub. Palgrave Macmillan) Volume 5, Issue 4, Spring 2010, pp. 357-368. (SJR-0,0375 and H.Index-2, Year-2008)
13. Piyoosh Rautela and **Girish Chandra Joshi**, “Earthquake safety elements in traditional Koti Banal architecture of Uttarakhand, India,” Research paper, *International Journal of Disaster Prevention and Management*, (Pub. Emerald) Volume 18, Issue 3, July 2009, pp. 299-316. (SJR-0,031 and H.Index-5, Year-2008)
14. Piyoosh Rautela and **Girish Chandra Joshi**, “Earthquake-Safe Koti Banal Uttarakhand, India,” Research Article, *Current Science*, (Pub. Indian Academy of Sciences) Volume 95, No.4, August 2008, pp. 475-481. (Impact factor-0.8, Year-2009)
15. **Girish Chandra Joshi** and M.L.Sharma, “Uncertainties in the estimation of M_{max} ,” Research Article, *Journal of Earth System Science*, (Pub. Springer) 117, S2, November 2008, pp. 671–682. (Impact factor-0.8, Year-2009)

In Conferences

1. **N. Behl, G.C. Joshi, A. Kumar, SK Panda, PR Bose** “Detailed Vulnerability Assessment of Masonry Buildings- Case Study , India ” 17th World Conference on Earthquake Engineering, Sendai, Japan ” 13-18 September ,2020, Sendai, Paper 3g-0009.
2. **Girish Chandra Joshi**, Manoj Kumar Bisht, Ranu Chanuhan and Shailesh Ghildiyal, “Rapid Visual Screening of Public Buildings in Uttarakhand,” 16th Symposium on Earthquake Engineering, Department of Earthquake Engineering, IIT Roorkee,” 20-22 December,2018, Roorkee, Paper ID 114.
3. Mayank Sharma, **Girish Chandra Joshi**, Pratima Rani Bose, Nitin Behl, Ranu Chauhan and Shailesh Ghildiyal, “Simplified and Detailed Vulnerability Assessment of hospital buildings in Uttarakhand,”16th Symposium on Earthquake Engineering, Department of Earthquake Engineering, IIT Roorkee,” 20-22 December, 2018, Roorkee, Paper ID 353.
4. **Girish Chandra Joshi**, Piyoosh Rautela, Manik Jain, and Piyush Arora, “Seismic Retrofitting Of School Buildings In Uttarakhand,India,”International Conference on Challenges in Disaster Mitigation and Management at Centre of Excellence in Disaster Mitigation and Management,Indian Institute of Technology, Roorkee,” 15-17 February, 2013, Roorkee,
5. Piyoosh Rautela, **Girish Chandra Joshi**, and Bhupendra Bhaisora,“Preliminary Seismic Vulnerability Assessment of Bageshwar and Nainital Town of Uttarakhand (India) Using Rapid Visual Screening Methodology,” 14th Symposium on Earthquake Engineering, Department of Earthquake Engineering, IIT Roorkee,” 17-19 December,2010, Roorkee, pp. 336-344.
6. **Girish Chandra Joshi**and M.L. Sharma, “Probabilistic Seismic Hazard Assessment of Delhi,” 14th Symposium on Earthquake Engineering,

Department of Earthquake Engineering, IIT Roorkee,” 17-19 December, 2010, Roorkee, pp. 253-259.

7. **Girish Chandra Joshi** and M.L. Sharma, “Strong Ground Motion and Uncertainties Estimation for Delhi, India,” (Abstract) 14th European Conference on Earthquake Engineering, August 30-September 03, 2010, Ohrid, Republic of Macedonia.
8. **Girish Chandra Joshi**, Piyoosh Rautela and Bhupendra Bhaisora, “Seismic Vulnerability Assessment of Mussoorie and Josimath, Uttarakhand (India),” 2nd India Disaster Management Congress, 4-6 November 2009, Vigyan Bhavan, New Delhi, paper no. A1/14.
9. Piyoosh Rautela and **Girish Chandra Joshi**, “Earthquake Safety Elements in Traditional Koti Banal Architecture of Uttarakhand, India,” 2nd India Disaster Management Congress, 4-6 November 2009, Vigyan Bhavan, New Delhi, paper no. A1/5.
10. Dadi, V. V. S. S. K, Ratnesh Kumar, **Girish Chandra Joshi**, “Seismic Survey and Condition Assessment of Existing School Buildings in Uttarakhand,” HDME 09, IIT Roorkee, Uttarakhand, April 18, 2009, pp. 69—80.
11. Piyoosh Rautela and **Girish Chandra Joshi**, “Earthquake safety features in traditional architecture of Yamuna valley in Uttarakhand, India,” National Conference on Mass Instability and Earthquake Risk Management in Mountainous Regions: Challenges, Lessons Learnt and Future Strategy, June 27-28, 2008, Dehradun, paper no. 24.
12. **Girish Chandra Joshi**, Mukesh Bijalwan, Bhupendra Bainsora, “Programming in MATLAB-7.0 for extreme value statistics in earthquake prediction,” National Conference on Mass Instability and Earthquake Risk Management in Mountainous Regions: Challenges, Lessons Learnt and Future Strategy, June 27-28, 2008, Dehradun, paper no. 11.
13. **Girish Chandra Joshi**, “Construction Techniques: A Case Study of Earthquake Resistant Construction in State of Uttaranchal,” First India

Disaster Management congress-IDMC 2006, Nov. 29-30, New Delhi, paper no. A1/32.

14. **Girish Chandra Joshi** and M.L. Sharma, "Magnitude Scale conversion relationships for Northern Indian Region using bivariate analysis," 13th Symposium on Earthquake Engineering, Department of Earthquake Engineering, IIT Roorkee, Dec. 2006, paper no. 195.

List of Books/Monographs/ Reports

1. Seismic vulnerability: Tale of two townships of Uttarakhand
(Piyoosh Rautela, **Girish Chandra Joshi**, Bhupendra Bhaisora and Shubham Pathak et.al.)
2. Seismic threat in Uttarakhand: Case Study of Mussoorie
(Piyoosh Rautela, **Girish Chandra Joshi**, Bhupendra Bhaisora and Shubham Pathak)
3. Timber-reinforced Stone Masonry (Koti Banal Architecture) of Uttarakhand and Himachal Pradesh, Northern India, **Report No. 150, EERI's World Housing Encyclopedia.**
(Piyoosh Rautela, **Girish Chandra Joshi**, Yogendra Singh, and Dominik H. Lang)
4. Preliminary Seismic Vulnerability Assessment of Mussoorie Town, (Uttarakhand).
(**Girish Chandra Joshi**)
5. Earthquake Safe Koti Banal Architecture of Uttarakhand, India.
(Piyoosh Rautela, **Girish Chandra Joshi**).
6. Preliminary Report for Retrofitting: Three Hostel Buildings of Welham's School Dehradun (submitted to Govt. of Uttarakhand).
(**Girish Chandra Joshi**)
7. Primary Report on Earthquake Safety of the Ashram Padhati School in Tunni Block of District Dehradun (submitted to Govt. of Uttarakhand).
(**Girish Chandra Joshi**)
8. Report on Earthquake Safety of the District Emergency Operation Centre (DEOC) Udham Singh Nagar (submitted to Govt. of Uttarakhand).

Training Participation

International

1. **“Understanding Risk Forum (URF)-2018”** organized by **The World Bank** with the support of **GFDRR in Mexico** from **14-18 May, 2018**.
2. **“Procurement Regulations, Project Management, Contract Management and Arbitration”** organized by **UDRP, Government of Uttarakhand** from **19-20 February, 2018**.
3. **“Water Challenges in India”** organized by **DHI- India** in **New Delhi** from **08-09 February, 2017**.
4. **“Building Resilience to Landslide and Geo-hazard Risk in South Asia Region”** organized by **The World Bank** with the support of **GFDRR in Kandy, Sri Lanka** from **November 15 to 17, 2016**.
5. **“Challenges in Disaster Mitigation & Management Strategies”** organized by **Centre of Excellence in Disaster Mitigation & Management, IIT Roorkee** in **Roorkee** from **15 to 17 February, 2013**.
6. **“Earthquake Vulnerability and Multi- Hazard Risk Assessment”** organized by **ICIMOD Nepal** with the support of **European Commission Humanitarian Aid** from **5 to 16 March, 2007**.
7. **“International Training Program for Seismic Design of Structures”** organized by **National Centre for Research on Earthquake Engineering (NCREE)** in **Taiwan** from **October 22 to 26, 2007**.
8. **“International Training Workshop on Bamboo as a Modern Construction Material”** by **UBFDB and INBAR in Dehardun, India** from **5 to 14 October 2009**.

National

9. **“Training on Seismic Microzonation of Hilly Areas”** organized by **C.B.R.I. Roorkee and C.D.M.M. Chennai** from **11 to 15 February, 2003**.
10. **“Multi-Hazard Resistant Design, Construction and Enforcement of Techno-Legal Regime”** organized by **C.P.W.D. Training Institute** from **17 to 21 April, 2006**.

11. **“Building Codes and Design”** organized by **National Institute of Disaster Management , Ministry of Home Affairs, Govt. of India, New Delhi** from 20 to 24 August, 2007.
12. **“Cost Benefit Analysis of Mitigation Projects”** organized by **National Institute of Disaster Management , Ministry of Home Affairs, Govt. of India, New Delhi** from 30 June to 01 July, 2008.
13. **“Certified Incident Managers Programme”** organized by **Centre for Disaster management, Lal Bahadur Shastri National Academy of Administration Mussoorie** from 18 to 22 August 2008.
14. **“ToT on Right to Information Act-2005”** organized by **Centre for Good Governance, Uttarakhand Academy of Administration Nainital** from 10 to 12 May 2010.
15. **“Contract Management”** organized by **The World Bank Group at Dehradun** from 26 to 28 July 2014.
16. **“Application of Remote Sensing, GIS & GNSS Disaster Management”** organized by **Indian Institute of Remote Sensing, ISRO at Dehradun** from October 30 to November 02, 2018.

Memberships

Executive Member of **“Indian Society of Earthquake Technology”** for consecutive three terms viz. 2007-2009, 2009-2011, 2015-2017 and 2017-19.

LANGUAGES

Mother Tongue- **Hindi**

Proficiency in **English and Hindi** both in spoken and written.

Referees

Shri Amit Singh Negi

Secretary

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I certify that all the information stated in this CV is true and complete to the best of my knowledge.

(Dr. Girish Chandra Joshi)