

## **Advertisement for a JRF position in Earth Science Discipline at IIT Gandhinagar**

**Project title:** Tectonic and climatic control on sediment routing in the NW Himalaya since late Quaternary

**Principal investigator:** Dr. Saptarshi Dey

**Duration:** 1 year (subjected to extension after evaluation at the end of the stipulated duration).

**Start date:** 1<sup>st</sup> September, 2018.

**Place:** IIT Gandhinagar, Palaj campus, Gandhinagar -382355, Gujarat, India.

Stipendium/ salary: 25,000 INR/month + HRA/ hostel accommodation as per norms.

**Study area:** Himachal Pradesh and Jammu area, India.

### **Briefing for the project:**

Dynamic coupling between tectonics and climate influences the erosion and sediment delivery and dictates the source-to-sink transport system, as well as the growth and evolution of the orogen. The Himalaya being one of the most active orogen, represents one such enigmatic natural laboratory where the interplay between tectonic and climatic impact on sediment routing is complex and lacks proper assessment of data.

The morphotectonically diverse Northwestern Himalaya is drained by the Indus and its' tributaries, such as the Sutlej, Beas, Ravi, Chenab etc. All these rivers originate in the interior of the Himalayan orogen from the glacial regions and traverse through the Higher, Lesser and Sub-Himalayan domain before they come out to the Indo-Gangetic plains. However, all these rivers show evidences of transient storage of sediments in the orogen interior. Our ultimate aim is to temporally constrain the sediment routing events by dating the geomorphic markers.

However, to start with the project, we have to work on the morphometry of the region and analyze the remotely-sensed data to identify potential targets for exploration and data collection from the field. The advertised position is designed primarily for computational analytics and its' application (including landscape evolution modelling) to the specific area: - it includes GIS techniques, programming in MATLAB and/or, SWAT analysis. Another aspect of the position is to take part in a geological expedition to the field area and work as an assistant to the PI. A combination of field data and remotely-sensed data will be used for further analysis.

**Pre-requisite for the position:** M.Sc. / M.Tech. in Earth Science or any related discipline (NET/GATE qualified).

**Skills required:** A sound knowledge in GIS, MATLAB/ R and designing. Must be acquainted with field geology.

**Contact:** [Saptarshi.dey@iitgn.ac.in](mailto:Saptarshi.dey@iitgn.ac.in)

**Deadline:** 05.07.2018