

## Statement of Purpose

I have always heard that water is a scarce but yet a renewable resource. With population rising and we pushing the planet on the course of its no return, Time has come to think and implement sustainable development for the water sector as well. This led me to develop an interest in Environmental Studies.

I also took two sequential classes that were related to Environmental Engineering, Waste Water Collection, Treatment and Disposal & Solid Waste Management. Because the courses were taught by a professor who is concerned chiefly with Environmental Issues, I have learned the standard treatment techniques for the development of a healthy riverine ecosystem by environmental concerns.

In addition to my interest in environmental systems, I have a specific interest in Geographical Information System (GIS) and Hydrological/Environmental Modelling, powerful tools for water resource management. While working on my dissertation project, I've learnt how to develop a comprehensive model of watershed hydrology and water quality that allows the integrated simulation of land and soil contaminant runoff processes with in-stream hydraulic and sediment-chemical interactions. I was then able to carry out the assessment of assimilative capacity at downstream of Haridwar for Dissolved Oxygen for the Ganga river and the effluent from the Sewage Treatment Plant in order to meet outdoor bathing criteria.

During my master's program, I got a stupendous opportunity to attend Urban Stormwater Management workshop conducted by Government of India under the Global Initiative of Academic Networks (GIAN) which enabled me to develop a new approach towards changing climatic conditions and to develop Low Impact Development (LID's) strategies so as to mitigate the adverse effects of uncertainties involved with the related developments. During the program, I was able to get a good grasp of various HEC Models and statistical language R.

I've worked as a research associate at the Indian Institute of Technology, Roorkee on a project involving Cumulative Environmental Impact Assessment which involves the study of various multipurpose river valley projects at different levels (Village/Tributary/Main River) so that the impacts of various hydropower plants can be quantified and an Environmental Impact Assessment can be arrived upon for the desired Sutlej Basin.

Working as an assistant professor, I've been able to teach subjects involving basic principles and processes of water supply engineering for the odd semester and management of water resources and surface hydrology in the even semester. Also, I'm able to co-guide five Master's thesis by which we are able to address some local level pollution as well as water management issues. This gives me a genuine experience with regards to the development of skill sets for the students and as well as encourages me to advance my knowledge base so as to be able to mentor students of coming generation.

With these views, If given an opportunity to pursue my doctoral degree by means of these prestigious universities, I shall be able to learn and master those techniques required in order to create a congenial and a better platform for future generations to come.