



Dr. Babbar is a native of India, where she was born and raised. She graduated with a B.Tech in Civil Engineering from NIT Kurukshetra, (India) and M.E in Irrigation & Hydraulics from Punjab Engineering College, Chandigarh (India). She completed her Ph.D in Hydrology from Indian Institute of Technology Roorkee (India) and work as an assistant professor of civil engineering at Thapar Institute of Engineering and Technology (TIET) Patiala, Punjab, India, where she has been since 2010. She teaches hydrology, fluid mechanics and irrigation engineering at TIET. Dr. Babbar hobbies include reading and traveling.

Agricultural & Biological ENGINEERING

New Scholar on the Block

Visiting Scholar: Richa Babbar

Title: Visiting Professor

Host Professor(s): Prof. Indrajeet Chaubey

Duration: 6 months

Location: LILY 2-114

Location: [Choose an item.](#)

Research Interest in ABE:

Agricultural non-point pollution (ANSP) is a worldwide problem. Among the measures to reduce ANSP, best management practices (BMPs) have proven to be a very useful tool to control ANSP. Several studies have instituted the implementation of BMP practices through the use of watershed models, most commonly being the SWAT model. However, these studies deal with only one aspect of an agricultural activity on a watershed i.e. the control of non-point pollution while the other conflicting aspect related to agricultural productivity is either less explored or is viewed as secondary objective. The protection of crop yield production is thus a challenge, which needs to be addressed while managing NPS pollution. My study, thus, focuses on building a relationship between dosage of fertilizer, crop yield and non-point pollution control based on SWAT output for a given watershed. In essential, I will be developing agriculture production functions for selected crops in watershed, evaluate the economics of fertilizer dose, and develop environment protection function based on nutrient loading so as manage economical balance of production and protection.

Application:

Agricultural production and the practices involved in agriculture are considered vital for the economic growth of any country. An agricultural activity provides food for its population along with other economical benefits. More is the population growth; more is agriculture stress coming in form of more production, thus requiring higher application of fertilizers/pesticides, which may lead to environmental degradation. Thus controlling one can aggravates the other. By considering an agriculturally intensive watershed, I seek to create optimum balance between these conflicting objectives.