The Great Lakes
The Great Lakes are amongst the largest freshwater lakes on earth. Sustainable management of the Lakes is important for the well-being of a large population of Canadians and Americans. However, the Great Lakes Ecosystem is under constant stress from pollution from point and non-point sources. Excess phosphorus loading to the Lakes is causing algal bloom. Many federal, provincial and local governments, agencies, groups, researchers, and individuals are working together for the restoration and protection of the Great Lakes.

About the SWAT model
The Soil and Water Assessment Tool (SWAT) is a public domain watershed model jointly developed by USDA Agricultural Research Service (USDA-ARS) and Texas A&M AgriLife Research, part of The Texas A&M University System. The main strength of the SWAT model is to provide an analytical tool for watershed managers, researchers, and strategists to predict and evaluate the effects of various management options on water, nutrients, sediments and pesticide loads at watershed and basin scale. The SWAT model is a widely-used, continuous, and daily time-step watershed scale model. For further information, please visit http://swatmodel.tamu.edu/. The model can be downloaded at no-cost from this site.

School of Engineering, University of Guelph, Guelph, Canada
The School of Engineering (SOE) at the University has 75 faculty and staff, 1700 undergraduate and 200 graduate students. The focus of the undergraduate and graduate programs are on Biological Engineering, Biomedical Engineering, Computer Engineering, Engineering Systems and Computing, Environmental Engineering, Mechanical Engineering and Water Resources Engineering. The SOE undergraduate major programs integrate elements of traditional engineering disciplines and draws on the strengths of our impressive faculty and research experience. This foundation combined with practical design-based learning gives the students tools to envision new and effective solutions to issues in the world and bring them to life.
Water Resources Engineering graduate program focuses on the use and management of land and water resources in rural and urban watersheds. Water resources engineering program at Guelph combines elements of other disciplines such as civil engineering, environmental engineering, agriculture, planning and geography in a unique combination ideally suited to address society's concerns and needs for surrounding water.

Canadian Great Lakes Region

Workshop on Watershed Modeling
&
A Two-Day Hands-On Training on
April 26 to 28, 2016

School of Engineering,
University of Guelph, Guelph,
Ontario, Canada
Workshop – Watershed Modeling Overview, Applications, and Recent Advances

Day 1 (Tuesday, April 26th)

The one-day workshop will focus primarily on watershed modeling applications for reducing pollution from non-point sources, and for the development and evaluation of Best Management Practices (BMPs) for improving downstream water quality and source water protection. Invited speakers will share their knowledge and modeling experience. Specific examples relevant to the conditions in the Great Lakes region will be discussed during the workshop. Some of the topics to be covered are:

- Watershed Modeling: For what purposes are models being used? What types of models exist? How does one select the right model for an application?
- The role of parametric and modeling uncertainty in watershed modeling
- Model Calibration & Validation: How are models calibrated/validated? Does calibration/validation match all applications? What improvements are needed in calibration/validation?
- Evaluation of BMPs: Can models be used to evaluate BMPs? What types and magnitudes of changes are reasonable to detect? What length of record is required?
- Issues related to the use of models for source water protection
- Application of SWAT model to address non-point source pollution on watershed scale

The invited talks will be followed by a group discussion on issues related to watershed modeling and selection/evaluation of BMPs.

Day 2 (April 27th)

Day 1 (Wednesday, April 27th)

- Welcome/introduction
- Introduction to SWAT/ArcGIS interface (GIS)
- Watershed delineation
- Landuse and soil overlay
- HRU delineation
- Weather and other inputs for the model (including point sources)
- Review of summary outputs

Day 2 (Thursday, April 28th)

- Finish SWAT simulation using SWAT/ArcGIS interface
- Visualization and interpretation of SWAT outputs through GenScn
- Introduction of calibration and validation techniques
- Address user questions and clarify anything covered in the training

SWAT Training

The two-day training is designed to introduce users to the model, review necessary and optional inputs, familiarize the user with the ArcGIS interface, and model applications.

Day 1 (Wednesday, April 27th)

- Welcome/introduction
- Introduction to SWAT/ArcGIS interface (GIS)
- Watershed delineation
- Landuse and soil overlay
- HRU delineation
- Weather and other inputs for the model (including point sources)
- Review of summary outputs

Day 2 (Thursday, April 28th)

- Finish SWAT simulation using SWAT/ArcGIS interface
- Visualization and interpretation of SWAT outputs through GenScn
- Introduction of calibration and validation techniques
- Address user questions and clarify anything covered in the training

Organizing Committee

Dr. Ramesh P. Rudra (University of Guelph, Guelph, Canada) (rrudra@uoguelph.ca; 519-824-4120 x52110)

Dr. Shiv O. Prasher (McGill University, Montreal, Canada) (shiv.prasher@mcgill.ca; 514-398-7774)

Dr. Pradeep K. Goel (Ontario Ministry of the Environment and Climate Change, Etobicoke, Canada) (pradeep.goel@ontario.ca; 416-235-6060)

Dr. Raghavan Srinivasan (Texas A&M, USA)

General information

The SWAT course will be led by Dr. Raghavan Srinivasan from Texas A&M, USA.

The workshop and course will be held at the School of Engineering, University of Guelph, Ontario, Canada.

Accommodation

Participants who need an accommodation are encouraged to book rooms on their own. Following hotels are at walking distance from the university:

- Delta Guelph Hotel and Conference Centre, 50 Stone Road West, Guelph, Ontario N1G 0A9 Canada, Phone: 1-519-780-3700
- Days Inn Guelph, 785 Gordon St, Guelph, Ontario, Canada, N1G 1Y8, Phone: 1-519-822-9112
- Best Western Plus Royal Brock Hotel & Conference Centre, 716 Gordon St, Guelph, Ontario, Canada, N1G 1Y6, Phone: 1-519- 836-1240

Workshop & Training Fees

Workshop – free for all participants

SWAT Training

Standard: 150 CAD
Student: 100 CAD

Deadline for payment is April 15, 2016.

Registration

For workshop and/or training registration, please send an email to Dr. Golmar Golmohammadi (ggolmoha@uoguelph.ca) to get the registration form.

Registration deadline is April 15, 2016.

For further information please contact Dr. Pradeep K. Goel (pradeep.goel@ontario.ca) or Dr. Golmar Golmohammadi (ggolmoha@uoguelph.ca).