

Position Title: Hydrologic Modeler

Employer: New York State Water Resources Institute (WRI) and Cornell University

Project Description: A collaboration with WRI, Cornell University, New York Department of Environmental Conservation (NYDEC), and various organizations throughout New York State works to identify peak flow under different weather scenarios and to identify undersized culverts. Since 2013 this project has been used to prioritize culverts for replacement to reduce flooding risks. Further, this project aims to develop and publish novel research ideas pertaining to hydrologic modeling, geostatistical analysis, and flood risk perception.

Job Description: The selected applicant will oversee hydrologic and hydraulic modeling to produce culvert-failure risk estimates. This work involves:

- Communication with Cornell and NYDEC staff to manage project timelines and deliverables
- Run existing ArcGIS and Python based flood risk tools to produce risk estimates
- Quality Assurance and Quality Control (QAQC) of flood risk predictions
- Evaluation of the model code to improve the conceptual design of software
- Modification of the model code to implement identified and requested changes
- Manage seasonal students to identify and make improvements to model code
- Management of large geospatial datasets
- Develop novel research concepts and work towards publishing results in a collaborative environment
- Training in field data collection for culvert hydraulics and aquatic organism passage using the NAACC protocols (<https://streamcontinuity.org/>)

Minimum Requirements:

- Bachelor's degree in Civil Engineering, Environmental Engineering, Hydrology, Computer Science, Applied Math, or related field
- Experience with ESRI ArcGIS or other GIS platforms (GRASS, SAGA, Q-GIS)
- Some familiarity with software programming/coding

Preferred Experience:

- Graduate degree in Civil Engineering, Environmental Engineering, Hydrology, Computer Science, or Applied Math
- 2 – 3 year's work experience (academic or professional)
- Familiarity with Python and R scripting languages
- Hydrologic modeling, specifically flood risk estimation
- Data analytics (model sensitivity and uncertainty analysis, machine learning, geostatistical analysis)
- Database management
- Passed FE exam (engineering degrees only)
- Authored publications in peer-reviewed academic journals

Application Materials: Please submit a letter of interest and briefly explain your relevant expertise and experience, a CV, and a list of three references to mtw5@cornell.edu. If you have questions contact Todd Walter (mtw5@cornell.edu) or James Knighton (jok8@cornell.edu)