

I am seeking one Ph.D. student to join my research group (www.gabrielevillarini.com) in the Department of Civil and Environmental Engineering at the University of Iowa, Iowa.

The research is a collaborative effort with economists at the Wharton School of Business of the University of Pennsylvania (<http://www.wharton.upenn.edu>). The main goal of the work is the development of statistical models to describe the relation between inland flooding associated with North Atlantic tropical cyclones (TCs) and impacts (direct economic losses and insurance claims) in the United States. Inland flooding is of high societal and economic relevance, but regrettably has received very little attention as most U.S. TC loss assessment efforts are focused on coastal flooding. Moreover, it is often the case that the most severe impact from heavy rainfall and fresh water flooding is far removed from the center of circulation of these storms, up to hundreds of kilometers away. The main outcomes of the proposed research will be: 1) the identification of the areas that are more at risk from inland flooding from North Atlantic TCs; 2) the characterization of the extent and magnitude of these events; 3) the development of statistical models relating flood magnitude to direct economic losses importantly controlling for the associated exposure and vulnerability aspects over the period 2000-2012; 4) the use of the resulting empirical relationships to perform sensitivity analysis examining the potential impacts of pre-2000 TCs under the current level of exposure and vulnerability.

The student will receive a competitive salary and will receive full tuition support. Women and individuals representing underrepresented groups are especially encouraged to apply.

The selected student will be part of IIHR—Hydroscience & Engineering. As a student of IIHR, she/he will have access to an exceptional range of resources, including laboratories, instrumentation and equipment, mechanical and electrical shops, research computing support, etc. After graduation, the student will have the distinction of being an alumnus of one of the oldest and most prestigious hydraulics laboratories in the world. Additionally, the student will be part of the Iowa Flood Center (IFC), the nation's first academic center devoted to the study of floods.

The University of Iowa is located in Iowa City, Iowa. Iowa City has been ranked one of the nation's most livable cities (USA Today, 2006), and one of the best small metropolitan areas for careers (Forbes Magazine, 2013). This small city has a population of about 62,000. It is a community built around higher education, with vibrant cultural opportunities and a long history of international connections, leadership, and accomplishment. Iowa City offers the safe, friendly quality of life for which the Midwest is known.

Qualifications

The qualified candidate must have a degree in engineering fields or climate-related science with a background in hydrologic sciences. Individuals with good knowledge of computer programming (in particular R and/or Python) and applied statistics are encouraged to apply.

Interested? Please contact me (gabriele-villarini@uiowa.edu) and include the following material:

- 1) Cover letter discussing research interests and relevant experience/background
- 2) Resume
- 3) Unofficial transcripts and/or GRE scores (TOEFL scores where applicable)

The University of Iowa is an equal opportunity/ affirmative action employer. All qualified applicants are encouraged to apply and will receive consideration for employment free from discrimination on the basis of race, creed, color, national origin, age, sex, pregnancy, sexual orientation, gender identity, genetic information, religion, associational preference, status as a qualified individual with a disability, or status as a protected veteran.