

# HANA ŠEVČÍKOVÁ

Senior Research Scientist  
Center for Statistics and the Social Sciences  
University of Washington

Data Scientist  
Puget Sound Regional Council.

## EDUCATION

Postdoctoral Fellow, University of Washington Statistics Department  
Ph.D. in Statistics at Helmut-Schmidt University, Hamburg  
Master in Computer Science at University Hamburg

## RESEARCH WORK

Dr. Ševčíková has been involved in projects about **probabilistic population projections** for all countries, including **fertility**, **life expectancy** and **migration**, as well as **projections at the sub-national level**. She is also working on the development of **land-use forecasting models** for the Puget Sound Regional council. Her knowledge of computational statistics and programming skill have also helped her group to implement their statistical methodology into software and R packages. She has published on CRAN R packages for population projection, mortality projection, and snow package, which have become part of the R core package parallel.

## BAYESIAN PROBABILISTIC POPULATION PROJECTION

Hana is one of the first statisticians to start exploring statistical demography. She has been working in this area for eight years, resulting in various publications, including a paper coauthored with Prof. Raftery, "Bayesian Probabilistic Population Projections for All Countries" in 2012. In her words, statistical demography is a novel but alluring area for a statistician. The dynamic demographic model developed by her and her team has been widely accepted in that field. Compared to the traditional population projection model, their new model takes into account uncertainty about fertility, mortality and migration. The United Nations' official population projection in 2015 was based in part on their methods. Since then, Hana and her team have been collaborating with the UN in optimizing projection model and developing R packages.



## CHALLENGES IN THE PROCESS

A few surprises emerged during the research process. For example, when building a model for projecting sub-national total fertility rates, Hana and her group designed a complicated Bayesian hierarchical model treating country and country's regions as different levels of the hierarchy. However, in many out-of-sample validations, it turned out that the sophisticated model did not perform as well as a simple auto-regressive scaling model, which then became the final model of choice. The simplicity turned out to be a nice feature of the methodology as users of the model are not expected to be trained statisticians.

## WORK - LIFE BALANCE

Although she has a heavy workload due to working as a scientist at two places on completely different projects, Hana can always maintain the balance between work and life. She loves camping, hiking, and playing sports such as ping-pong and pickleball. Hana loves her dog. Playtime with her dog always helps her alleviate the stress of a busy workday.

## ADVICE FOR STUDENTS

Once you find out what you like working on, insist on doing it. It is blissful to spend every day working in areas that you like.

