

DEPARTMENT OF MATHEMATICS & STATISTICS



UNIVERSITY
OF WYOMING

Thursday

March 31, 2022

4:10 - 5:00 pm AG 1030 or via zoom:

<https://uwyo.zoom.us/j/2815118676>

Reception before the talk:

Ross Hall 261 at 3:30 pm

Dr Josep Ginebra

Technical University of Catalonia (UPC)

Statistics & Operations Research



Bayesian modelling for life expectancy mapping; Changes in Barcelona from 2007 to 2018

Abstract: When mapping life expectancy, and investigating its local variation in time, there is a conflict between using large areas and/or mortality data from long periods of time to have low variance life expectancy estimates, and using small areas and single year mortality data to explore the space time variation of life expectancy in detail, without bias.

A Bayesian model is presented to smooth annual small-area life expectancy estimates and help deal with that trade off. The specific area effect on life expectancy, together with its spatial and temporal dependencies are modeled through random effects, while the effect of covariates is modeled through a fixed effect component.

The approach is illustrated, by using it to explore how life expectancy at birth of males and of females, and their difference, varied in space and in time in Barcelona between 2007 and 2018. A follow up study mapping the life expectancy gap due to Covid19 will also be discussed.