



UNIVERSITY: Public University of Navarre (UPNA)

WIT PROGRAMME'S RESEARCH LINE NAME: Spatial Statistics Problems (Artificial Intelligence)

DOCTORAL PROGRAMME: Doctorate in Mathematics and Statistics

<https://www.unavarra.es/escuela-doctorado/doctorate-programs/current-plan/science/doctorate-in-mathematics-and-statistics?languageId=1>

COMPLETE DESCRIPTION OF THE LINE

The main objective in this research field is to provide new tools to estimate spatial and spatio-temporal patterns of mortality and incidence of cancer or other chronic diseases, and to detect areas with an excess risk. The detection of high-risk areas is crucial to uncover health inequalities and help health authorities to take action to alleviate these inequalities. One of the general principles of public health included in the General Law of Public Health is that of equity, which establishes that policies, plans and programmes having an impact on health must promote the reduction of health inequalities. Additional applications comprise revealing spatio-temporal patterns of gender-based violence by regions in countries such as India, where this problem is deeprooted.

Research topics: New methods in disease mapping to deal with: high-dimensional problems; Cancer registries issues on data sources; Spatio-temporal confounding; Causal inference; Spatio-temporal statistics to analyze gender-based violence



RESEARCH GROUP NAME: Spatial Statistics

COORDINATOR: María Dolores Ugarte

- Last and first name; link to the “Portal of scientific production”:
Ugarte, María Dolores; <http://www.unavarra.es/pdi?uid=387>
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MEMBERS OF THE RESEARCH LINE:

María Dolores Ugarte (Full Professor)
Ana F. Militino (Full Professor)
Tomás Goicoa (Full Professor)
Jaione Etxeberria (Associate Professor)
Aritz Adin (Associate Professor)
Guzmán Santafé (Associate Professor)
Gonzalo Vicente (Posdoc)
Erick Orozco-Acosta (Ph-D candidate)
Arantxa Urdangarin (Ph-D candidate)
Garazi Retegui (Ph-D candidate)

ANOTHER RESEARCH LINES OF THE GROUP:

Statistics in Remote Sensing (<https://spatialstatisticsupna.github.io/>)



- Entities involved in research lines and contact person:
 - ✓ Academic entities: Norwegian University of Science and Technology (Andrea Riebler), University of Glasgow (Duncan lee), University of Minnesota (James Hodges)
 - ✓ Industrial entities:
- Joint supervision of doctoral thesis with international universities or non academic institutions:

Norwegian University of Science and Technology / Institute of Public and Occupational Health of Navarre

- Brief group overview

Spatial Statistics is a research group dedicated to develop methodology and solve problems in the field of applied statistics in a broad sense. Currently, our research is focused on statistical modeling of spatial and spatio-temporal processes with environmental and biomedical applications. Much of the methodological work is motivated by practical problems and case studies. The group aims to exchange knowledge, generate new thinking and work helping to solve real problems in many fields including remote sensing, one our new research areas. Collaboration with companies, other research groups, and public administrations has been our rule. Recently, the group has received a prize for the best applied statistical contribution (SEIO-BBVA 2021 Prize given by an international committee). [<https://www.fbbva.es/noticias/fallados-los-premios-sociedad-de-estadistica-e-investigacion-operativa-seio-fundacion-bbva-2021/>]

- Link of the group to the “Portal of scientific production”: [Here](#)
- Pictures, links... to academic or industrial partners (if any)

<https://spatialstatisticsupna.github.io/>



Requirements:

- 1.- Other: Statistics
- 2.- Computer Science
- 3.- Medical Sciences

Additional requirements: Advanced programming in R and general programming skills, good English level (C1), to be familiar with Bayesian methods, be ready to work in an interdisciplinary research environment.