

PUBLIC SELECTION BASED ON QUALIFICATIONS AND INTERVIEW FOR THE AWARDING OF NO. 1 EARLY STAGED GRANT LASTING 12 MONTHS FOR CONDUCTING RESEARCH PURSUANT TO ART. 22 OF LAW NO. 240/2010 AT THE CENTRE FOR TERRITORIAL STUDIES (SC 11/B1 - GEOGRAPHY - SSD M-GGR/01 - GEOGRAPHY AND M-GGR/02 - ECONOMIC AND POLITICAL GEOGRAPHY ON THE PROJECT "URBAN NEXUS - INTELLIGENT MODELLING E BIG DATA MAPPING PER L'ANALISI DELLA CONNETTIVITÀ E DELLA RIGENERAZIONE DI ALCUNE CITTÀ EUROPEE" (CUP: F12F16000040001) - TYPE B

announced with decree of the Chancellor Rep. no. 138/2019 of 06.03.2019 and posted on the official registry of the University on 06.03.2019

RESEARCH PROJECT

"Computational geography: mapping and Big Data for spatial analysis and urban planning"

Research structure: Centre for Territorial Studies

Duration of the grant: 12 months

Scientific Area: 11 - History, philosophy, pedagogy and psychology

Academic recruitment field: 11/B1 - Geography

Academic discipline M-GGR/01 - Geography and M-GGR/02 - Economic and political geography

Scientific Director: Prof.ssa Emanuela Casti

Objectives of the research programme:

The objectives of the research fall within the perspective of Computational Geography and provide for the analysis of multiple data sources - with particular regard to Big Data - useful for tracing the mobility of inhabitants, considered as residents and city users, and the construction of mapping for territorial analysis and urban planning. More precisely, the research, surpassing the opposing center-periphery model, shows the multi-polar city as an urban structure created by the mobility of the inhabitants.

Project title and research program: Computational geography: mapping and Big Data for spatial analysis and urban planning

The candidate will be involved in the research group of the University of Bergamo on the project "Excellence Initiative" Urban Nexus ", coordinated by prof. Emanuela Casti and Federica Burini, at the CST-DiathesisLab. Specifically, the research activity will have Prof. Emanuela Casti as scientific director and will work within the group of the research project under her supervision.

Crossing multiple sources of data (Big data, Social media, cell phones data, public administration data, surveys, ...), the candidate will have to use Geographic Information Systems and information and communication technologies for the analysis of the flows and mobility of city users, with a view to urban planning. The research will be divided into several phases: the identification of Big Data sources referring to the Bergamo area seen from a multi-scale perspective; the collection of data and their visualization for their intelligibility; the questioning of data aimed at answering questions related to the mobility of inhabitants in urban spaces and aimed at the construction of algorithms; the mapping of data using GIS mapping systems or cybercartography.

Research results

The research will be able to envisage an advancement of knowledge from a theoretical-methodological point of view, in the territorial analysis starting from different sources of Big Data. Furthermore, it will develop the creation of communication tools - graphics, infographics, cybermapping - able to show the research results also in participatory processes.