

RECRUITING AND TRAINING PHYSICIANS-SCIENTISTS TO EMPOWER TRANSLATIONAL RESEARCH
A MULTILEVEL TRANSDISCIPLINARY APPROACH
FOCUSSED ON METHODOLOGY, ETHICS AND INTEGRITY IN BIOMEDICAL RESEARCH



RESEARCH TRAINING PROGRAM

I. General Information

Title of the research project:

Environmental determinants of health in the general population

Name and address of the department:

Research Center in Epidemiology and Preventive Medicine (EPIMED), Dept. of Medicine and Surgery

Student's supervisor:

Prof. Giovanni Veronesi (giovanni.veronesi@uninsubria.it)

II. Description of the project

Background

Environmental stressors, including exposure to ambient air pollution and temperature, are recognized determinants for many chronic diseases, including cardiovascular and respiratory diseases, and neurological disorders. In the near future, the increasing prevalence of exposures due to climate change is likely to increase the attributable burden of diseases in the population. However, major knowledge gap remains in the mechanisms of action as well as on the interplay with other health determinants, limiting identification of susceptible individuals and targeted preventive strategies.

What is the aim of the project?

Using data from a population-based prospective study (the RoCAV cohort), the project aims to investigate the association between environmental stressors and health, disentangling the mechanisms of action and identifying susceptible individuals.

What techniques and methods are used?

Population-based cohort of 3777 residents in the city of Varese at the time of recruitment (2013-2016), with follow-up data for major chronic diseases.

When did the department start working on this project? (year)

Recruitment of the RoCAV cohort: 2013-2016.

Type of research project:

Basic science Clinical research without lab work Clinical research with lab work

III. Student's involvement

The student will mainly observe YES NO
The student will observe the experiments but will be involved in data analysis YES NO
The student will take active part in experiments ("lab work") YES NO
The student will take active part in clinical examination (clinical research) YES NO
The student will be allowed to work with patients YES NO

What are the tasks expected to be accomplished by the student?

The student will actively contribute to a research team with biostatisticians, epidemiologists and clinicians. S/he will participate in the definition of specific research questions, in the bibliographic research, and also in activities on clinical data (e.g., definition of events, data cleaning, data collection). The student will be involved into the critical discussion of the analyses' results, and contribute to the preparation of scientific reports.

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What is expected from/what will be the general outcome of the student?

- To prepare a poster / presentation / scientific report / abstract
 The student's name will be mentioned in a future publication
 Opportunity to present together with the supervisor the results on a conference
 No specific outcome is expected

IV. Requirements

What skills are required from the student?

Ability to work in team with different background expertise, collaboration and communication skills. Knowledge of Scientific English. Knowledge of PubMed and other advanced tools for bibliographic research (e.g. ResearchRabbit). Knowledge of basic software for data handling (e.g., MS Office, RedCap).

Is there any special knowledge or a certain level of studies needed?

Subjects passed: Biostatistics. Medicine and public health (preferable).

Are there any legal limitatons in the student's involvement in the project? YES NO

If yes, what are the limitations?

Confidentiality on individuals' data is mandatory

For the use of students considering participating in the project, further information can be found from the following references:

1. Veronesi G, Gianfagna F, Karachaliou M, Guasti L, Kogevinas M, Ferrario MM. Association between long-term exposure to air pollutants with breakthrough SARS-CoV-2 infections and antibody responses among COVID-19 vaccinated older adults in Northern Italy. *Environ Res.* 2025;265:120450. doi: 10.1016/j.envres.2024.120450.
2. Veronesi G, De Matteis S, Silibello C, Giusti EM, Ageno W, Ferrario MM. Interactive Effects of Long-term Exposure to Air Pollutants on SARS-CoV-2 Infection and Severity: A Northern Italian Population-based Cohort Study. *Epidemiology.* 2025;36(1):11-19. doi: 10.1097/EDE.0000000000001792.
3. Gianfagna F, Veronesi G, Bertù L, Tozzi M, Tarallo A, Ferrario MM, Castelli P; RoCAV Project Investigators. Prevalence of abdominal aortic aneurysms and its relation with cardiovascular risk stratification: protocol of the Risk of Cardiovascular diseases and abdominal aortic Aneurysm in Varese (RoCAV) population based study. *BMC Cardiovasc Disord.* 2016;16(1):243. doi: 10.1186/s12872-016-0420-2.

V. Schedule

Duration of the project:

1 month 2 months 3 months

There are approximately 4 hours of work per day.

Available months:

January February March April May June
 July August September October November December

How many students can you accept to the project at the same time? 1

Special remarks: None

NOTE: a scientific report is required at the end of the program