# Ioannis SAKELLARIS

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## CURRENT WORKING STATUS

Post-doctoral Researcher at Equipe **OPPaLE** - Obstetric, Perinatal, Paediatric Life Course Epidemiology Team, Centre de Recherche en Epidémiologie StatistiqueS (**CRESS - UMR 1153**), **Institut national de la santé et de la recherche médicale (INSERM)**, Paris, France (**Feb 2026 – now**).

## EDUCATION

- **Ph.D., Department of Mechanical Engineering, University of Western Macedonia (UOWM) Greece, in collaboration with National Centre for Scientific Research (NCSR) "Demokritos". Jan 2013 – Jan 2021.**
  Dissertation: *Indoor Air Quality Assessment through Measurements and Questionnaires*
- **MSc, School of Rural, Surveying and Geoinformatics Engineering (SRSE), National Technical University of Athens (NTUA),** Interdisciplinary Interdepartmental Postgraduate Program of "**Environment and Growth**". **Sep 2010 – Jun 2012.**
  Thesis: *Estimating the economic value of groundwater of the Asopos River basin aquifer by means of the Contingent Valuation Method*
- **Diploma of Environmental Engineer, School of Environmental Engineering, Democritus University of Thrace (DUTH). Sep 2004 – Jun 2010.** Thesis: *Thermal simulation of three buildings in the city of Xanthi.*

## RESEARCH INTERESTS AND EXPERTISE

- **Environmental epidemiology and public health intervention evaluation**, with particular attention to **early-life exposures** and their impact on developmental health.
- **Analysis of epidemiological cohort data** to identify health associations, patterns, and impacts of **environmental parameters, air pollutants and chemicals on health** (e.g., respiratory).
- **High-dimensional exposure assessment and multi-source data integration** (air pollution, climate, biomarkers, health records) using machine learning to characterize complex mixtures, investigate determinants of health risk, and strengthen **predictive modeling in population health research.**
- **Statistical analysis** using IBM SPSS, STATA, MATLAB, SAS, PYTHON (e.g., numpy, pandas, matplotlib, Machine Learning tools: XGBoost, randomForest), and R (e.g., dplyr, geepack, glmmTMB, xgboost).
- **Database management (health/measurements/models outputs)** in Windows / Linux environments (e.g., python based scripts), including supercomputers (e.g., ARIS-GRNET), accessing large datasets (e.g., CORDEX, COPERNICUS, EEA).
- **Data quality control,** data sourcing, transformation, ethical compliance and data visualization.
- **Assessment of Indoor Environmental Quality (IEQ) and health/comfort** perception through **questionnaire surveys** and combined data analysis with **measurements** (e.g., air pollutants), **identification of associations**, effects etc.
- **Indoor Air Quality (IAQ) experimental studies**: design and execution of measurement campaigns for PM, VOCs, $NO_2$, $O_3$, $CO_2$, etc., including ventilation and outdoor pollution assessment.
- **Use of weather/air quality models** (**WRF/WRF-Chem**, CAMx), emission inventories (e.g., EDGAR, MOZART, MEGAN), including setting up and creating a fully automated procedure of nested case simulations.
- **Modeling climate, atmospheric pollution, and wildfires** (**WRF-SFire** coupled with WRF-Chem) using high-resolution elevation and fire fuel data (EFFIS, COPERNICUS).
- **Weather clustering** statistical analysis (eg., k-means, PCA, etc.) using **large historical** and **RCP scenario** datasets.
- **Deployment and calibration of low/mid-cost** air quality and environmental sensors / personal remote sensing devices.

## SKILLS

- Working in Windows and LINUX environments in local clusters or in Supercomputer Infrastructures (ARIS-GRNET).
- Programming skills; Python, R and MATLAB package.
- Expertise in forecasting models, WRF/WRF-Chem/WRF-SFire.
- Pre and post process data using PYTHON, CDO, NCL.

- Extensive knowledge of R, SPSS, STATA and in ML algorithms e.g., XGBoost, Random Forest, R statistical packages.
- Skills in GIS tools, e.g., QGIS, ArcGIS, MAPINFO, ER Mapper and CAD packages e.g., AUTOCAD.
- Knowledge in simulations tools of Multizone Air Flow - COMIS and CONTAM.
- Conduct extensive literature reviews, write analyses, and interpretation of study results.
- Experience in participation in writing proposals for attracting funding, managing and implementing tasks of WPs.

## PROFESSIONAL AND RESEARCH EXPERIENCE

Previous positions as **post-doctoral** researcher*:

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|---|---|
| 15/01/24 – 15/01/26 | Scientific work in CRESPI project and FdF funded project. Employer: PI. Dr. Orianne Dumas, Integrative Respiratory Epidemiology Team, U1018 - Center for Research in Epidemiology and Population Health (CESP), French National Institute of Health and Medical Research (Inserm), (France, Paris/Villejuif). |
| 01/01/23 – 31/12/23 | Scientific work in projects TREEADS and ISEO. Atmospheric Chemistry and Innovative Technologies Laboratory, at the Institute of Nuclear and Radiological Sciences and Technology, Energy and Safety – INRASTES, National Centre for Scientific Research (NCSR) "Demokritos", (Greece). |
| 12/01/23 – 12/07/23 | Scientific work in project SOLVE. Department of Mechanical Engineering, University of Western Macedonia (UOWM) (Greece). |
| 01/04/22 – 31/03/23 | Scientific Research in project "Development of New Innovative Low Carbon Footprint Energy Technologies to Enhance Excellence in the Region of Western Macedonia. Department of Mechanical Engineering, University of Western Macedonia (UOWM) (Greece) |
| 01/04/22 – 30/06/22 | Scientific work in project "The European Human Biomonitoring Initiative"". Environmental Engineering Laboratory, Department of Chemical Engineering, Aristotle University of Thessaloniki (AUTH) (Greece). |
| 13/01/21 – 31/12/21 | Scientific Research in project "Support for researchers in emphasis on young researchers - part B". Department of Mechanical Engineering, University of Western Macedonia (UOWM) (Greece). |
| | * I constantly work at the labs without breaks besides the official dates of the contracts. For overlapping employments, the work time was shared equally between the two employers/projects. |

Participation as a scientific associate in **12** research projects:
- **EU Horizon/FP7** funded projects: TREEADS, HBM4EU, ICARUS, HEALS, OFFICAIR, EPHECT.
- **National** funded projects: CRESPI (FR), ISEO (GR), SOLVE (GR), IAQ-OFFICAIR (FR), NERIS (GR), ENV DSS (GR).

Personal Grants and scholarships (3):
- Post-doctoral: "Impact of Indoor Air Pollution in Daycare Environment on Child and Adult Respiratory Health" funded by **Fondation de France (FdF)**, "Inventory of pollution sources and quantification of their contribution using dispersion models" funded by **Greek National Strategic Reference Framework** (NSRF 2014-2020).
- Phd student: "Comfort, perceived air quality and environmental pollution in modern office buildings in congested areas" funded by **Greek National Strategic Reference Framework** (NSRF 2014-2020).

## SCIENTIFIC PUBLICATIONS

Number of presentations in scientific journals: **24 + 3 (submitted), including 10 as first author**.
**h-Index: 14** (source: Scopus)
Number of presentations in scientific conferences: **41 including 11 as first author.**
A full publication list is available.

## CERTIFICATIONS

- Introduction to Environmental Epidemiology.
- Advanced Course on "Fluid Mechanics of Buildings for Energy, Health, and Well-Being".
- 2nd Python and Machine Learning Bootcamp.
- Copernicus-C3S User Learning Services training event.
- Introduction to Linux by LinuxFoundationX.
- Introduction to Programming with Python.

- Introduction to Programming with MATLAB.
- PRACE- Meteorological and climate modelling.
- SPSS statistics.

## REVIEWER IN SCIENTIFIC JOURNALS

**Guest Editor:** Special Issue "Indoor Environment Quality and Environmental Comfort", Journal of Applied Sciences, MDPI (2022-2023) & Special Issue " New Insights into Ventilation, Comfort and Air Pollution", Journal of Applied Sciences, MDPI (2021-2022).
**Reviewer in journals:** Environment International, Indoor Air, Building and Environment, International Journal of Environmental Research and Public Health, Applied Sciences, Environments, Sustainability Buildings.

## COLLABORATION WITH SCIENTIFIC TEAMWORKS

**COST** - European Cooperation in Science and Technology: **Action CA22162:** FutureMed: A TRANSDISCIPLINARY NETWORK TO BRIDGE CLIMATE SCIENCE AND IMPACTS ON SOCIETY (FutureMed).
**FAIRMODE** - Forum for Air Quality Modeling: WG2 – Quality assurance, quality check and fitness for purpose of AQ assessment modelling applications.
**Aethair, Inc**. - 1516 N. 5th st. Suite 107, Philadephia PA 19122 USA; Collaboration with company's CEO Dr. Vasileios Nasis, for improving Air Quality sensors.

## FOREIGN LANGUAGES

**English**: Fluent Proficiency (C2 Edexcel, Pearson Test of English, Level 5); **French**: (B2); **German**: (Zertifikat Deutsch, B2, Goethe-Institut); **Greek**: native speaker/mother tongue.

## PROFESSIONAL MEMBERSHIPS

Technical Chamber of Greece (TEE-TCG); International Society of Exposure Science (ISES); International Society for Environmental Epidemiology (ISEE); International Society of Indoor Air Quality and Climate (ISIAQ).

## COMMUNITY SERVICE

Military service in the Greek Airforce (Apr 2016 – Apr 2017).