Xavier Rodó López

ICREA Research Professor
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Part A. PERSONAL INFORMATION

First and Family name	Xavier Rodó López	
Researcher codes	WoS Researcher ID	F-7663-2017
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	Open Researcher and Contributor ID (ORCID)	0000-0003-4843-6180

A.1. Current position

Name of University/Institution	Barcelona Institute for Global Health (ISGlobal)		
Department	CLIMA - Climate and Health Program		
Address and Country	Doctor Aiguader 88, 08003 Barcelona, Spain		
Phone number	+34932147310	E-mail	xavier.rodo@isglobal.org
Current position	ICREA Research Professor and Lead Scientist Climate and Health Program	From	2008

A.2. Education

BSc/MSc/PhD	University	Year
PhD in Population Ecology	Universitat de Barcelona	1997
MSc in Biological Sciences	Universitat de Barcelona	1989
BSc in Biological Sciences	Universitat de Barcelona	1989
Engineering MSc diploma courses	Universitat Politècnica de Catalunya	1984

Research fields & description:

Climate, ENSO, infectious diseases, climate change, cholera, malaria, dengue, Kawasaki, aerial microbiome, COVID-19, climate predictability, greenhouse gases, carbon dioxide, Mediterranean climate

I am interested in research in fields as diverse as the understanding/detection/simulation of climate impacts (and in particular the modelling of infectious diseases driven by climate), but also on more fundamental questions about the climate system.

Models & Prediction of climate-driven Infectious Diseases

Understanding and modelling the population epidemiology of climate-driven infectious diseases is the central priority of the Health Models RG (e.g., from waterborne infections such as cholera and virus in water such as adenovirus and rotavirus, to vectorborne (VB) ones such as malaria, chikungunya and dengue, to zoonotic VBD like cutaneous leishmaniasis and echinococcosis. We have worked since 2019 in

influenza-related diseases and recently also in MERS-CoV (Sardar et al., 2019) and of course, COVID-19, López & Rodó, Nat. Hum. Beh. 2020; Res. Phys. 2021; Fontal et al., Nat. Geosc. 2021). This research takes place in both endemic regions and in epidemic conditions (such as the fringe areas of deserts and highlands for malaria in Africa, Laneri, Rodó et al., PNAS 2015, Rodó et al., Nat. Comms. 2021, and Asia, Cash et al., Nat. Clim. Change, 2013). Testing for the interplay between intrinsic and extrinsic factors through the development of techniques for isolating local signatures and the construction of flexible and efficient statistical or mechanistic models of different complexities, has been also selectively approached for attribution purposes (e.g. Pascual et al., 2000; Koelle, Rodó et al, 2005, Rodó et al., 2002; Pascual et al., 2006, Laneri, et al., 2015; Lowe et al., 2014; Fontal et al., 2021). In those studies, we tried to effectively disentangle (Cash et al., 2008, 2009, 2010) and later incorporate, the role climate plays in the modulation of those infections, with the use of pacemaker climatic simulations and with the aid of atmospheric general circulation models having prescribed forcing regions of interest (Cash et al., 2008, 2009, 2010). This way, different regions of the tropical Pacific (TP), the tropical south Atlantic (TSA) and the Indian Ocean (IO) proved to be dynamically related to local climate in selected regions of South-East Asia and northwest India. In the latter (Cash et al., Nat. Clim. Change, 2013), forcing from the TSA region was also simulated with pacemaker experiments for the region and the atmospheric connection to NW India disentangled. The ultimate forcing on rainfall in Gujarat and Rajasthan desert-fringe districts of India appears to be strongly connected to the increase in the NDVI vegetation index above a certain threshold, the former affecting the life cycle and abundance of the mosquito vector populations and ultimately the incidences of regional malaria. For the first time, an early-warning system scheme showed how a threshold in Sea-Surface Temperatures (SST) was the cut-off level at which ultimately a malaria epidemic (>984 cases) could take place. Similar conclusions could be derived for the dynamics of malaria in desert-fringe areas in Senegal, showing the added value of climate information and its interplay with herd immunity in adequately simulating both the seasonal and interannual variability of the disease (Laneri et al., PNAS 2015). More recently, we could demonstrate how climate change is affecting malaria dynamics in the highlands of East Africa (Ethiopia) in such a strong way, as to similarly force malaria variability from two very different parasite species (namely *Plasmodium falciparum* and the relapsing *P. vivax*). Despite both parasites have very different dynamics, striking synchronicity at all time scales showed up in both parasites' clinical malaria cases (sub-seasonal to decadal), clearly denoting the relevance of climate for malaria control in the region, and despite the massive interventions that have been operating in the region. The famous global warming slowdown at the turn of the 20th century was neatly reproduced in both parasite time series of clinical malaria (Rodó et al., Nat. Comms., 2021). Similar approaches are also being pursued for modeling and successfully anticipating dengue in Brazil (Lowe et al., Lancet IDD, 2014, eLife, 2016), Thailand (Lowe et al., IJERPH, 2015), Ecuador (Petrova et al., Clim. Dyn. 2016), and for chikungunya in Cambodia (Robinson et al., PLoS NTD, 2014; Dommar et al., Acta Tropica, 2014) and the entire Caribbean region (Dommar et al. 2021UR). This research on dengue prediction received great attention by both the media (e.g. see below links to BBC News and FBBVA Fronteras del Conocimiento) and governmental agencies in both Brazil and the USA. Alongside, I received a personal invitation to participate in the US Dengue Challenge Initiative by the Office of Science and Technology of the US White House, National Science and Technology Council's (NSTC) Interagency Pandemic Prediction and Forecasting Science and Technology Working Group in September 2015. Two of our predictive models (one dynamical and the other statistical) were selected among the 16 best to proceed to the next stage of the initiative. Final results demonstrated how the multimodel ensemble of all participating models was superior to any individual model and also skillful wrt the persistence of dengue anomalies. This fact seeded the first multimodel prediction system for dengue worldwide (Johanson et al., PNAS 2020), a fact that valued our study a Charles Shepard Award nomination by the CDC in 2020. The life-long serotype-specific immunity paradigm following dengue infection was shown to not always occur, potentially undermining vaccine development. Incorporation of waning immunity largely improved dengue prediction in French Polynesia (PNAS USA, 2021 UR). Early on, I also participated in joint work with colleagues of the Dep. Mathematics of the Kolkata University in

developing a 2-strain mathematical model for seasonal forecasting of MERS-CoV epidemics in Saudi Arabia (Sardar et al., PLoS NTD 2020). The model accommodated human behavior in the form of differing functions, was the first to be operating as a nowcast system such as in climate or weather forecasts and warned that epidemics could easily take off in Riyadh and Macca but not in Madina. We recently also demonstrated how the 6th cholera pandemic of Indian origin was associated with a novel and particularly invasive strain, with unusual climate anomalies having played an important facilitating role in the takeover of the classical strain (Proc. Roy. Soc. B., 2021 UR). Future research on the population dynamics of waterborne diseases modulated by climate will centre on the different model sorts of cholera patterns existing in former Bengal, Assam, Bihar and the Gangetic Plain districts and study the role of climatic forcing on these differential dynamics with the help of the COLA AGCM. This research should serve to disentangle the origin of the dual cholera peak in Bangladesh, one of the long-standing 'mysteries' of this disease thanks to a collaboration with hydrologists at the EPFL (Switzerland), climatologists at COLA and ecologists from U. Chicago (USA). We will attempt to apply these results to study the role of climate attribution in cholera dynamics and will use this new knowledge in the characterization of other WBD in slum areas of Chandigarh, Delhi and Pondicherry.

A recent milestone has been the implementation of a new computational platform (ARBOCAT) in 2019 for the prevention and generation of early alerts of community-driven local outbreaks of arboviral diseases for 948 municipalities in Catalonia. The system is currently in use by the Catalan Public Health Agency and we are downscaling it to be implemented to over 50 cities in Europe, northern Africa and Asia. ARBOCAT was shortlisted among the 5 finalists for the EIC Prize on Epidemics, to be awarded by the EU in early 2022. Last but not least, we worked since the beginning of the COVID-19 pandemics to implement a mathematical model for COVID-19 for deriving actionable daily-to-weekly forecasts. The model was first nudged to simulate the early epidemic curve in Spain, as well the effects of different levels of social distancing and semi confinement, as a preprint as early as April 2020. These initial forecasts were timely sent to both the Spanish and the Catalan MoH. Results were published and were under the most viewed publications (Lopez & Rodó, Res. Physics, 2021). Later in 2020, we modified this mathematical structure to include a function allowing confined individuals to return to the pool of susceptibles, in a seven-compartmental model system that was amongst the first attempts to simulate the effect of different post-confinement strategies and the use of personal protection measures and social distancing (Lopez & Rodó, Nat. Hum. Behav. 2020). We also included a series of functions and parameters that mimic the effects of NPI measures adopted by the population as well as included a function to account for the loss of acquired immunity. These studies and the platform, developed in just 10 days due to the enormous public health relevance, had been used in March and April 2020, to deliver key information for the Spanish and Catalan Governments at a time when this kind of simulations were not available for informing policies in Spain (Mitjà et al., Lancet, 2020). We also extended our process-based model computational platform to fit and inform on post-lockdown strategies for other countries lagging Spain in terms of their COVID-19 pandemic evolution (López and Rodó, Nat. Hum. Behav., 2020). In late 2021 and by applying tailored techniques for transient signal detection and testing for the explicit incorporation of climate in the transmission term, we could successfully demonstrate that COVID-19 is a fully climate-driven seasonal disease across both hemispheres (Fontal et al., Nat. Comp. Sci, 2021). This study received huge attention by both media and the public and after two months still remains in the top 1 percentile of all papers published. It has a 860 as the altimetric score and it is the reference study on the role of climate in the current COVID-19 pandemic. We currently have a fully operational model for the COVID-19 pandemic predicting disease incidence for several countries and are working towards developing a global network model for pathogen X and the appearance of new SARS-CoV-2 variants (Lopez and Rodó, in prep).

Climate Extremes and Temperature-Related Mortality

We have also been very active in trying to model climate extremes and how they translate into health morbidity and mortality, addressing ultimately its associated risk through innovative approaches (Ballester et al., 2010a,b and, Ballester et al. 2011a,b). In particular, we demonstrated how it is effectively possible to improve the simulation of climate extremes, with the help of the basic information contained in the three first central moments of the probability distribution, a domain for which climate models are better suited. By making use of the mean, the standard deviation and the skewness, both cold and warm extremes in the temperature probability density function could be much better approximated than straightforwardly attempting to model them. In Ballester et al. (Nat. Comms. 2011), we extended for the first time this approach to the understanding of the behavior of the two extremes of the temperature-human mortality joint distribution, with transfer functions developed for the two tails of the pdf that included the info contained in the central moments. The study covered 187 regions in Europe, developed the first scenarios for temp/mortality and showed that on average, an excess of 15.000 deaths per year would be attributed to climate change by the end of the present century. Under the A1B scenario mortality in the warm tail would compensate that for the cold tail around decades 2040-2060. Ongoing research along this line in collaboration with the Univ. Montpetller and Univ. Geneva, includes the incorporation of demography and socio-economy in both the transfer-function development of T/M functions and in the future scenarios and we are developing new probabilistic visualization tools (Lowe et al., 2015) to make better use of this information as a climate service relevant for stakeholders. Age-dependent functions for populations of different social and economic conditions and in different geographical areas in Europe were studied and the previous deterministic framework expanded to a probabilistic one in which daily to monthly temperature and moisture data can be nudged to mortality on an early-warning system. To this end, we used macroeconomic data and models to show that the European countries and regions with the largest (smallest) economic slowdown during the 2008 recession were also those that experienced the largest (smallest) acceleration of human lifespan (Nature Comms., 2019). Finally, an urban climate model developed by VITO (UrbClim) was successfully deployed to simulate Barcelona's climate as a paradigm coastal city, with its UHI and DTR modulated by sea breezes. We used UrbClim to generate climate change projections for T developed at a scale of 100-meter resolution and its associated morbidity/mortality effects. Our platform is now used by the Barcelona Public Health Agency. Through the EARLY-ADAPT project led by Dr. Ballester, we jointly analyse the environmental (climate variability, air pollution, desert dust and infectious diseases) and socioeconomic (macroeconomy, ageing, inequality and gender gap) drivers of recent trends in public health, focusing on human mortality, hospital admissions, occupational accidents and maternal and child health. We demonstrated that without strong mitigation measures, climate change will increase temperature-attributable mortality in Europe. Indeed, if global warming is not curbed, the increase in heat-related deaths will outstrip the decline in cold-related mortality, especially in the Mediterranean Basin (Martínez-Solanas et al., Lancet Plan. Health 2021; 5: e446–54).

Climate dynamics and predictability: ENSO, the Mediterranean and the Indian Monsoon

As a basic parallel area of research, our group on climate dynamics and predictability actively researches on El Niño-Southern Oscillation (ENSO) origins and the mechanisms and the schemes that can improve El Niño (EN) prediction. We are also particularly involved in trying to disentangle the ways by which ENSO teleconnection to distant regions, with the aid of both statistical and dynamical models of various complexities. In particular, we are interested in the interactions between ENSO and the SW Asian monsoon on the one hand (Cash et al., 2008a,b; 2009; 2010; Ma et al., 2011, 2012; Ma and Rodó, 2014; Rodó et al., 2016) and on the other, in how ENSO interacts with the Tropical Atlantic to modulate climate variability in the Mediterranean region (Rodó, 2003). Our research included the selective prescription in the COLA AGCM v2 of relevant regional oceanic regions, holding the SSTA in the TP to vary according to

its climatology. By doing this in an ensemble mode, the effects of different areas in the TNA showed up related to their differential modulation of climate variability in the Mediterranean area. For the study of the monsoonal dynamics in SE Asia, our results enabled us to disentangle which were the drivers of rainfall variability over Bangladesh and east India, and were able to uncover the existence of a dynamic see-saw in atmospheric pressure at different heights, that acted as the main local rainfall modulator (Cash et al., 2009; 2010.; Ma et al., 2012a,b). These series of studies uncovered how Bangladesh behaves differently to mainland India in this respect, how stable this relationship has been in the past and how we could not use it for climate studies indices such as the AIRI and the IMR developed for India as tracers of the monsoon. As a last relevant point in combination with those above, we studied the intra-seasonal dynamics and oscillations (ISO) of the monsoon precipitation characteristics and the differences in the ISOs between the two main rainfall regions (Western Ghats and the Bay of Bengal, Ma et al., 2012a,b). These two studies revealed that the activities of both the inter-tropical convergence zone (ITCZ) and the western Pacific subtropical high (WPSH) at intra-seasonal time scales contribute strongly to the structure and propagation of the ISOs (Ma et al., 2012a,b). This contribution differs in each case for the two preferred intra-seasonal bands (10-20 days and 32-50 days). We furthermore tested how the former differences were effectively simulated by high complexity coupled climate models, or through a combination of those included within the ENSEMBLES project (Ma et al., 2012b). All this research, with a clear climatic focus per se, has also begun to be put to the service of the improvement in infectious diseases prediction of relevant infections in the region, with a heavy toll of affected people and human mortality burden (cholera, malaria, dengue...) As an example of the climate services interface, we work towards the development of inferential models at the population level for infectious diseases prediction, that explicitly incorporate extrinsic environmental (e.g. climatic) covariates in either statistical or dynamical frameworks (Lowe et al., 2015; Rodó et al., 2016; Sardar et al., 2019). We also began to study the origin of climatic predictability associated with a third active regional rainfall center located over the Indochina peninsula (Ma and Rodó, 2014), as it is shown as an important modulator of dengue variability in both Thailand and Cambodia. Our research on the origin and predictability of El Niño Southern Oscillation (ENSO) phenomenon has further confirmed the important role of the subsurface temperature and salinity anomalies in shaping the magnitude, timing and nature of El Niño events (Ballester et al., J. Clim. 2016; GRL.,2017; Petrova et al., Clim. Dyn.,2017). We made progress in the understanding of ENSO dynamics and predictability and the role of the southern extratropics, improving the seasonal and long-lead climate forecast capacity and the low-frequency predictability (J. Climate 33(1):163, 2020). This basic research was also used to develop a dengue early warning system for regions in South America, whose climate is heavily affected by ENSO (Int. J. Clim., 2020).

Airborne Chemistry, Microbiome and Human Health

In the last few years our research led us to focus also on a new domain of study, that of aerial microbiome and its relation to human health. A combined approach integrating climate research on atmospheric circulation and wind dynamics with a time-series study on Kawasaki disease epidemiology in Japan and the US led in 2011 to the publication of a study on Kawasaki disease that firmly pointed to the role of winds and large-scale circulation in the propagation of the aetiologic agent of this disease (Rodó et al., Nat. Sci. Rep., 2011). In this study, IC3 led the process conducting to the identification of the wind-borne nature of the etiologic agent, a paradigm shift in the mainstream thinking around this mysterious syndrome. The striking result was that the agent might be transported through winds. To confirm that hypothesis, an airborne sampling had to take place immediately, to be able to obtain an appropriate sample of the lower troposphere within a window of time discovered to be of maximum impact of winds on KD, lasting only 3- 5 months. Thanks to the diversity of expertise in UDIC and to the fact that in IC3, we had an equipped lab that customarily made greenhouse gases science and that devotes also to deploy technical developments and airborne samplings for greenhouse gases characterization in the troposphere (Font et al., JGR-Atmos., 2008, 2009, 2010, 2011). New airborne

filtering equipment was developed in just three months, already adapted to filter large volumes from equipped aircrafts. The whole flying campaign over Japan could be timely performed and unique filters were collected that are now being analyzed at Columbia University and yielding largely unexpected results. The new 2014 study (Rodó et al., PNAS 2014) drastically pointed to intensive cereal cropland regions in NE China as the potential source area for the etiological agent of this mysterious disease. Application of a mathematical model for all major different sorts of infectious diseases unequivocally pointed to a different kind of ailment other than an infection coursing in the human host. Instead an immune-exacerbated reaction to the inhalation of possibly a toxin might be the causal mechanism leading to the ailment known as Kawasaki disease. This hypothesis is being further developed for a series of other world locations where the disease is prevalent. Similarly, the discovery of 11 different species of Candida in the atmospheric samples for times of enhanced incidence of the disease is sought as the main avenue towards the characterization of an etiological agent. In a 2020 study, KD dynamics (onset and evolution) is seen to be linked to the nature and composition of aerosols (Rodó et al., 2020). We have determined, for the first time, that both the nature and chemistry of airborne particles is causally linked to the appearance, intensity, development and termination of KD disease in Japan. We explored the linkage between metal elements in aerosols coming from agricultural lands and KD changes and showed how a ML model can account for 45-50% of the total KD variability (Nature Sustain. 2021, UR). We have also shown there is a differential abundance of Corynebacterium spp in nasopharyngeal samples from KD patients –when compared to controls- that also corresponds to increased presence of this genus in aerosol flight samples at times of increased KD incidence (Front. Ped., 2021).

Stemming from KD research, we recently managed to show how long-range dispersal of microbes through wind currents takes place that can reach very distant regions (500-1000Km), transporting viable bacteria and fungi. We showed how air masses above the planetary boundary layer and ultimately entraining to the surface could contain an extremely rich diversity of microbial species, some bearing antimicrobial resistance genes (Rodó et al., Nature Ecol. Evo., 2021UR.). This area of research is shedding light on the potential causes of many other human rheumatic diseases, allergies and vasculitides, as we showed also for ANCA (Draibe et al., 2018), rhinitis and asthma (Bousquet et al., 2018a,b,c; 2019; Menditto et al., 2019; Bedard et al., 2019).

In 2019, we launched the AIRLAB Core facility to delve into the study of the air microbiome and its interplay with atmospheric chemistry and physics, contributing to causing disease in humans. We there focus on the analysis of the chemical, physical and biological composition of aerosols in both urban and rural environments. The research in the AIRLAB is focused on the analysis of the chemical and the biological composition, and the physical characterization of the air, in both urban and rural environments, and on the development of integrated low-cost portable technological systems for in-situ measurements. Main focus areas are the high-precision determination of particulate matter, from coarse to nanoparticles, reactive oxidative species, bioreactive airborne metals, volatile organic compounds and the vast array of microbial diversity (bacteria, fungi and viruses) as well as their by-products (essentially toxins). Intensive and automated adaptive machine-learning techniques, linked to the High-Performance Computing (HPC) facilities at University Pompeu Fabra (UPF), which use as an input the former air determinants as well as human health indicators and epidemiological datasets (e.g. for rheumatic, respiratory and cardiovascular diseases), are routinely employed to uncover hidden relations between environmental factors and human health. Hazardous agents that show the highest degree of association with human diseases, will be furthered and tested with in vitro models in human cells.

Air composition data is then used to search for temporospatial correlation with human diseases (e.g. rheumatic, respiratory and cardiovascular) and interactions of air chemistry with airborne microbes applying machine learning (ML) techniques (UIA, 2019; Microbiomap, 2020). Other research and technological activities we perform are mainly focused on better unraveling the relationships of many

biogeochemical processes with climate. This attempt requires long-term research approaches due to the complexity of ecological systems and their interactions with anthropogenic forcing. Stemming from our former work at the LAO unit of IC3, at the AIRLAB we currently invest efforts and resources in the monitoring and simulation of greenhouse gases and atmospheric fluxes, on the development of microprobes and personal sensors and on the study of the role climate variability plays on the global carbon cycle (Peters et al., 2009; Font et al., 2011, Grossi et al, 2014, Occhipinti et al, 2014). In the latter, we could trace the daily and seasonal atmospheric CH4 mixing ratio variability by using ^{222}Rn as a tracer (Grossi et al., 2018). We recently traced the fingerprint of the summer 2018 drought in Europe on CO2 measurements, (Ramonet et al., Philos. Trans. R. Soc. Lond. B. Biol. Sci., 2020). In the next years we will be improving our capacity for monitoring the rich diversity of aerial/airborne microbiome, now extending this characterization not only to bacteria and fungi, but to include also viruses and Antimicrobial Resistance Genes in both bacteria and fungi, as these may have relevant implications for AMR control. Indeed, we have been able to detect the presence of these resistant genes in prelim aerosols samples taken in Japan.

Another area of expansion in my research for the next few years will be through the involvement of the AIRLAB in the improvement of the obsolete air quality network in Barcelona, stalled for the last 20 years in just 7 urban stations. Focussing in Barcelona, we recently implemented a network of 15 AQMesh monitoring equipment in schools in the city, that provide real-time measures of particulate matter (PM1, PM2.5, PM10), NO, NO2, O3, CO and SO2, as well as of meteorological parameters (temperature, relative humidity and pressure). We now proposed the Barcelona townhall and the Barcelona Met Area Government to expand and further improve this network, with the deployment of 100 new AQMesh sensors throughout the BMA, the operation of mobile lab units equipped with last-generation prototypes for measuring in real-time many unknown chemical/physical/biological components. Among these, of high relevance to human health, there are ultrafine particles, tens of different metals and organic compounds, as well as airborne microbes and toxins. This strategy will be combined with an AI initiative, involving massive parallel computing in a HPC and collaborations with the Dep. applied Maths and Computing of the UB and the InLab of UPC. The AI will seek common patterns to relate air determinants of human ailments.

We have also co-developed in 2020 with PLAIR, INC a new laser-induced fluorescence (LIF) prototype equipment that incorporates a deep-UV laser to explore the real-time characterization and quantification of microbial species (bacteria, fungi and viruses) in air (DUV-LIF). Preliminary results indicate that the new system is able to distinguish among several bacterial and fungal species and among different types of viruses (Fontal et al., 2022 UR).

And last but not least, amidst the current pandemic, we are since the detection of the first cases in Barcelona, studying, in collaboration with the CBMSO in Madrid, the presence and viability of SARS-CoV-2 in urban aerosols and crowded spaces in cities (Barcelona and Madrid). Stay tuned…

POSITIONS

2021: **Osaka University**, Osaka, Japan - Special Appointed Visiting Professor.
2021-: **Universitat de Vic**, Vic, Catalonia, Spain – Associate Professor in Climate Change & Health.
2017-present: **Barcelona Institute for Global Health (ISGlobal)**, Barcelona, Catalonia, Spain - Lead Scientist CLIMA-Climate and Health Program
2008-2016: **Institut Català de Ciències del Clima (IC3)**, Barcelona, Catalunya, Spain - Research Unit Head (UDIC)
2008-2013**:** **Institut Català de Ciències del Clima (IC3)**, Barcelona, Catalonia, Spain - Director and ICREA Research Professor
2011-present: **Nature Scientific Reports**, US - Editorial Board Member
2004-2008: **European network MEDCLIVAR** - Member of Steering Committee
2004-2006: **European network CLIVAR**, Spain - Co-chair
2004-present: **ICREA Research Professor.**
2001-2004: **Departament d'Astronomia i Meteorologia de la Universitat de Barcelona**, Barcelona, Catalonia, Spain - Researcher (Ramón y Cajal)
2001-2010: **Center for Ocean, Land and Atmospheres (COLA)**, Maryland, United States - Visiting Researcher
2001-2003: **Universidad de Michigan**, Michigan, United States - Consultant
1999-2001: **Departament d'Ecologia de la Universitat de Barcelona**, Barcelona, Catalonia, Spain - Associate Professor
2003-2008: **Programa de postgrado de la Càtedra UNESCO de la Universitat Politècnica de Catalunya** Barcelona, Catalonia, Spain - External Professor
1999-2003: **Laboratori de Recerca del Clima del Parc Científic de Barcelona**, Barcelona, Catalonia, Spain - Research Director
1998-1999: **Universidad de Princeton**, New Jersey, United States - Visiting Researcher
1997-2000: **Universidad de Maryland**, Maryland, United States - Consultant
1997-1998: **Programa Nacional de Ciencias de Colombia** – Advisor
1993-2001: **Departament d'Ecologia de la Universitat de Barcelona**, Barcelona, Catalonia, Spain – Researcher
1997: **E.U.P Mataró, Universitat Politècnica de Catalunya**, Mataró, Catalonia, Spain - Acting Professor
1996: **E.U.P Mataró, Universitat Politècnica de Catalunya**, Mataró, Catalonia, Spain - Associate Professor
1994: **Departament d'Ecologia de la Universitat de Barcelona**, Barcelona, Catalonia, Spain - Associate Professor
2011-present: **Observatoire Pyrénéen du Changement Climatique (OPCC), Comm. Travail des Pyrénées,** Toulouse, France - Advisory Board Member
1990-1993: **Departament d'Ecologia de la Universitat de Barcelona**, Barcelona, Catalonia, Spain - Doctoral fellow of the Ministry of Education and Science

PARTICIPATION IN RESEARCH PROJECTS:

58	2022-2026	Digital Twins Enabled Indoor Air Quality Management for Healthy Living (TWIN-AIR)	
	Call: HORIZON-HLTH-2021-ENVHLTH-02-02		*Funding Institution*: EU H2021 *Project ID:*
	Role: PI		*Budget*: 7.994.070,00€ (total) 1.076.063,00€ (ISGlobal)
	Center: Barcelona Institute for Global Health (ISGlobal)		

57	Set'21-Set'23	Optimising the Design of Ensembles to Support Science and Society (ODESSS)	
	Call:		*Funding Institution*: NERC, UK
	Role: PI: David Stainforth		

	Center: Barcelona Institute for Global Health (ISGlobal)

56	Sep'20-Sep'21	Metagenomic analysis of aerosols in a Japan's seasonal cycle
	Call: 2nd Call for Transnational Access to the EASI-Genomics facilities	*Funding Institution*: EU H2020, Max Delbrück Center for Molecular Medicine, Helmholtz Association *Project ID:* PID10275
	Role: co-PI	*Budget*: 200.000€
	Center: Barcelona Institute for Global Health (ISGlobal)	

55	Mar'20-Mar'21	Transmisión de SARS-CoV2 por el aire: detección en hospitales y tecnologías innovadoras
	Call: ISCIII COVID-19 Special Call for Projects	*Funding Institution*: ISCIII *Project ID:* COV20/00144
	Role: co-PI	*Budget*: 479.000€
	Center: Barcelona Institute for Global Health (ISGlobal)	

54	Mar'20-Sep'21	Mapping the urban microbiome of Barcelona
	Call: Pla Barcelona Ciència	*Funding Institution*: Ajuntament de Barcelona *Project ID*
	Role: PI	*Budget*: 61.220,00€
	Center: Barcelona Institute for Global Health (ISGlobal)	

53	Sep'19-Aug'22	Becas de doctorado "la Caixa" INPhINIT Retaining – Adrià San José
	Call: Becas de doctorado "la Caixa" INPhINIT Retaining	*Funding Institution*: "la Caixa" *Project ID:* NA
	Role: co-PI	*Budget*: 115.092,00€
	Center: Barcelona Institute for Global Health (ISGlobal)	

52	Jan'19-Jan'21	Personal Técnico de Apoyo – Lídia Cañas
	Call: Personal Técnico de Apoyo	*Funding Institution*: Ministerio de Educación, Cultura y Deporte - MECD *Project ID:* PTA2017
	Role: co-PI	*Budget*: 39.000,00€
	Center: Barcelona Institute for Global Health (ISGlobal)	

51	Jan'19-Dec'22	HELICAL - HEalth data LInkage for ClinicAL benefit
	Call: Horizon 2020's Marie Sklodowska-Curie - Innovative Training Networks (ITN)- European Training Networks. MSCA-ITN-ETN	*Funding Institution*: European Commission *Project ID:* 813545
	Role: co-PI	*Budget*: 250.904,88€
	Center: Barcelona Institute for Global Health (ISGlobal)	

50	Dec'18-Dec'19	Climate Change Challenge. Big Data for the city
	Call: Subvencions Pla Clima	*Funding Institution*: Ajuntament de Barcelona *Project ID:*
	Role: co-PI.	*Budget*: 3.000,00€
	Center: Barcelona Institute for Global Health (ISGlobal)	

49	Nov'18-Oct'21	Blue, Green & Grey_Adapting Schools to Climate Change	
	Call: Urban Innovation Actions, UIA (GBG_AS2C)		*Funding Institution*: EU Administration *Project ID:*
	Role: co-PI.		*Budget*: 323.033,00€
	Center: Barcelona Institute for Global Health (ISGlobal)		

48	Oct'17-Sep'19	ACCLIM - Acclimatization scenarios and early warning system of temperature-related mortality in Europe	
	Call: Horizon 2020's Marie Sklodowska-Curie Individual Fellowships (H2020-MSCA-IF-2016)		*Funding Institution*: European Commission *Project ID:* 737480
	Role: co-PI. PI: J. Ballester		*Budget*: 158.121,60€
	Center: Barcelona Institute for Global Health (ISGlobal)		

47	Jun'17-Nov'19	PUCS - Pan-European Urban Climate Service	
	Call: Horizon 2020's Exploiting the added value of climate services - Demonstration of climate services (H2020-SC5-2016-TwoStage)		*Funding Institution*: European Commission *Project ID:* 730004
	Role: co-PI. PI: J. Ballester		*Budget (total):* 319.375€ (3.514.416,25€)
	Center: Barcelona Institute for Global Health (ISGlobal)		

46	Mar'17-Des'19	PICAT - Plataforma Integral per al Control d' Arbovirosis a CaTalunya	
	Call: Plan Estratégico de Investigación e Innovación en Salud (PERIS) – Dep of Health		*Funding Institution*: Catalan Government *Project ID:* SLT002/16/00466
	Role: Principal Investigator		*Budget*: 93.275,90€
	Center: Barcelona Institute for Global Health (ISGlobal)		

45	Dec'16–Feb'21	Blue-Action - Arctic Impact on Weather and Climate	
	Call: Horizon 2020's Blue Growth - Research and Innovation action (H2020-BG-2016-1)		*Funding Institution*: European Commission *Project ID:* 727852
	Role: co-PI. PI: J. Ballester		*Budget (total):* 215.000€ (7.500.000€)
	Center: Barcelona Institute for Global Health (ISGlobal)		

44	Jun'16-Jul'17	SECTEUR - Sector Engagement for C3S, Translating European User Requirements	
	Call: Evaluation and Quality Control Function for the Sectoral Information System (C3S_52)		*Funding Institution*: Copernicus Climate Change Service (C3S), European Centre for Medium-Range Weather Forecasts (ECMWF)
	Role: co-PI		*Budget*: 192.000€
	Center: Institut Català de Ciències del Clima (IC3)		

43	Set'15-Des'16	CLIMADAT_MANT - Manteniment de les 8 estacions de mesura construïdes durant el projecte Climadat

	Call: Obra Social “la Caixa”	*Funding Institution*: Obra Social “la Caixa”
	Role: co-PI. PI: J.A.Morguí	*Budget (total)*: 510.000€
	Center: Institut Català de Ciències del Clima (IC3)	

42	2015-2016	Air.Enquirer EduCaixa-KITS
	Call: Obra Social “la Caixa”	*Funding Institution*: Obra Social “la Caixa”
	Role: co-PI. PI: J.A.Morguí	*Budget (total)*: 245.000€
	Center: Institut Català de Ciències del Clima (IC3)	

41	2015-2018	WINDBIOME - Aerial micro-biome diversity and their role in Kawasaki disease
	Call: Paediatric Projects	*Funding Institution*: Daniel Bravo Foundation
	Role: Principal Investigator	*Budget (total)*: 234.000€
	Center: Institut Català de Ciències del Clima (IC3)	

40	2015-2016	Climate change projections and adaptation scenarios of temperature related mortality in Europe
	Call: Beatriu de Pinós Fellowship(BP-DGR-2014)	*Funding Institution*: Catalan Government
	Role: co-PI. PI: J.A.Morguí	*Budget (total)*: 91.022,40€
	Center: Institut Català de Ciències del Clima (IC3)	

39	Oct’10-Des’15	InGOS - Integrated non-CO2 Greenhouse gas Observing System
	Call: Horizon 2020's 7th Framework Programme Infraestructures – FP7 1 (FP7-INFRASTRUCTURES-2011-1)	*Funding Institution*: European Commission *Project ID:* 284274
	Role: co-PI. PI: J.A.Morguí	*Budget (total)*: 29.575,28€
	Center: Institut Català de Ciències del Clima (IC3)	

38	Jan’14-Des’15	LEISHTOP-MED: Modelling the interplay between climate and population dynamics of cutaneous LEISHmaniasis TO enhance Prediction in the MEDiterranean countries
	Call: RETOS 2013	*Funding Institution*: MINECO
	Role: Principal Investigator	*Budget (total)*: 100.000€
	Center: Institut Català de Ciències del Clima (IC3)	

37	Jan’13-Des’15	MEMENTO - Modulating mechanisms of the onset of El Niño events
	Call: Horizon 2020's 7th Framework Programme's Marie Curie International Outgoing Fellowships (FP7-PEOPLE-2011-IOF)	*Funding Institution*: European Commission Centers: California Institute of Technology (Caltech), Pasadena, California, United States; and Institut Català de Ciències del Clima (IC3), Barcelona, Catalonia, Spain *Project ID:* 300727
	Role: co-PI	*Budget (total)*: 256.206€
	Center: Institut Català de Ciències del Clima (IC3)	

36	Nov'12-Gen'17	EUPORIAS - European Provision of Regional Impact Assessment on a Seasonal-to-decadal timescales	
	Call: Horizon 2020's 7th Framework Programme for Environment- (FP7-ENV-2012-two-stage)		*Funding Institution*: European Commission *Project ID:* 308291
	Role: Principal Investigator		*Budget (total)*: 237.338,56€
	Center: Institut Català de Ciències del Clima (IC3)		

35	Nov'13-Oct'16	NEW INDIGO - Intestinal parasites in northern India - Effects of climate patterns on prevalence of different intestinal parasites in children and on occurrence in water and fresh produce as vehicles of transmission	
	Call: Partnership Programme, Biotechnology applied to Human Health PARA-CLIM-CHANDIRGARGH		*Funding Institution*: MINECO- Acciones de programación conjunta internacional: ERA-NET *Project ID:* PCIN-2013-038
	Role: Principal Investigator		*Budget (total)*: 50.000€
	Center: Institut Català de Ciències del Clima (IC3)		

34	Jan'12-Des'16	DENFREE - Dengue Research Framework for Resisting epidemics in Europe	
	Call: Horizon 2020's 7th Framework Programme for Health- (FP7-HEALTH-2011-single-stage)		*Funding Institution*: European Commission *Project ID:* 282378
	Role: co-PI. PI: F.J. Doblas		*Budget (total)*: 178.653,10€
	Center: Institut Català de Ciències del Clima (IC3)		

33	Mar'09-Mar'14	TTORCH - Tall TOwer and surface Research Network for verification of Climate relevant emissions of Human origin in Europe	
	Call: European Science Foundation		*Funding Institution*: MINECO
	Role: co-PI. PI: F.J. Doblas		*Budget (total)*: 25.000€
	Center: Institut Català de Ciències del Clima (IC3)		

32	Jun'11-Oct'14	TREE-RINGS & CLIMATE - Temporal instability of tree-ring/climate relationships: tree responses to climatic change and implications for paleoclimate research	
	Call: Horizon 2020's - Marie Curie Action - International Outgoing Fellowships for Career Development (FP7-PEOPLE-2009-IOF)		*Funding Institution*: European Commission *Project ID:* 253277
	Role: co-PI. PD: L. Andreu		*Budget (total)*: 241.761,10€
	Center: Institut Català de Ciències del Clima (IC3)		

31	Mar'11-Feb'14	CLIMRUN - Underpinning work to enable provision of local scale climate information (annual to decadal timescales)	
	Call: Horizon 2020's 7th Framework Programme for Environment (FP7-ENV-2010)		*Funding Institution*: European Commission *Project ID:* 265192
	Role: Principal Investigator		*Budget (total)*: 305.500€
	Center: Institut Català de Ciències del Clima (IC3)		

30	2010-2015	CLIMADAT - Implementation of 8 new field research&monitoring stations throughout the Iberian Peninsula and the Canary Islands	
	Call: Obra Social “la Caixa”		*Funding Institution*: Obra Social “la Caixa”
	Role: Principal Investigator		*Budget (total)*: 5.925M€
	Center: Institut Català de Ciències del Clima (IC3)		

29	Feb’10-Jul’13	QWeCI - Quantifying Weather and Climate Impacts on Health in Developing Countries	
	Call: Horizon 2020's 7th Framework Programme for Environment (FP7-ENV-2009-1)		*Funding Institution*: European Commission *Project ID:* 243964
	Role: Principal Investigator		*Budget (total)*: 299.400€
	Center: Institut Català de Ciències del Clima (IC3)		

28	Jan’10-Mar’13	VIROCLIME - Impact of Climate Change on the Transport, Fate, and Risk Management of Viral Pathogens in water	
	Call: Horizon 2020's 7th Framework Programme for Environment (FP7-ENV-2009-1)		*Funding Institution*: European Commission *Project ID:* 243923
	Role: Principal Investigator		*Budget (total)*: 156.000€
	Center: Institut Català de Ciències del Clima (IC3)		

27	2009-2011	“Kawasaki Disease: Disentangling the role of Climate in the outbreaks”
	Fundación La Marató de TV3. Institut Català de Ciències del Clima (IC3)	

26	Jan’11-Des’12	MIDAS6 Productos SMOS de salinidad oceánica y humedad del suelo. Mejoras y demostración de aplicaciones
	MICINN AYA2010-22062-C05-04. Consejo Superior de Investigaciones Científicas	

25	Set’09-Ago’12	FLUXPYR - Red transfronteriza de instrumentos y expertos para la determinación y la pastorales de los Pirineos, en un contexto de cambio climático y cambios en el uso del suelo
	POCTEFA Programme EFA 34/08. FLUXPYR Project	

24	2007-2008	“Investigation of the carbon dioxide content of the atmosphere in regional and continental scale”
	Acciones integradas Hispano-Húngaras- PRJ.HH2006-0014. Ministerio de Educación y Ciencia. X. Rodó (LRC-PCB)	

23	2007-2010	PANDORA - Predicción climática estacional en el área mediterránea combinando multimodelos dinámicos, proyecciones estadísticas, modelos oceánicos regionales y experimentos climáticos tipo marcapasos
	Ministerio de Educación y Ciencia. X. Rodó (LRC-PCB)	

22	2007-2009	ICARO-2 - Reducción de las incertidumbres en el balance del carbono peninsular en relación a las situaciones sinópticas atmosféricas. Medidas de CO2 mediante instrumentos aerotransportados
	Ministerio Ciencia y Tecnología. X. Rodó (LRC-PCB)	

21	2007-2009	"Carboschools"
	European Commission. 6th FWP, Sustainable Development, Global Change and Ecosystems. P. Ciais (LSCE-CNRS, Paris, Francia)	

20	Abr'07-Set'11	IMECC - Infrastructure for Measurement of the European Carbon Cycle
	Call: Horizon 2020's 7th Framework Programme for Infraestructures (FP6-2004-INFRASTRUCTURES-5)	*Funding Institution*: European Commission *Project ID:* 26188
	P. Rayner (LSCE-CNRS, Paris, Francia)	

19	Feb'07-Abr'11	GEOMON - Global Earth Observation and Monitoring
	Call: Horizon 2020's 6th Framework Programme for Sustainable Development (FP6-2005-GLOBAL-4)	*Funding Institution*: European Commission *Project ID:* 36677
	P. Ciais (LSCE-CNRS, Paris, Francia)	

18	Abr'07-Jun'11	CIRCE - Climate Change and Impact Research: Mediterranean Environment
	Call: Horizon 2020's 6th Framework Programme for Sustainable Development (FP6-2005-GLOBAL-4)	*Funding Institution*: European Commission *Project ID:* 36961
	A. Navarra (INGV, Bologna, Italia) i L. Tubirana (IDDRI, Paris, Francia)	

17	2005-2009	MEDCLIVAR
	MEDCLIVAR European Science Foundation. P. Lionello, R. Boscolo & P. Malanotte-Rizzoli	

16	2005-2006	"Mantenimiento de la Red Temática CLIVAR-España"
	Ministerio Educación y Ciencia (Acció Complementària). Xavier Rodó (LRC-PCB)	

15	2004-2008	"The interplay of Extrinsic and Intrinsic Factors in Epidemiological Dynamics: Cholera as a Case Study"
	National Science Fundation (NSF, EE UU). IP: M. Pascual (Universidad de Michigan, EE UU)	

14	2004-2006	"Cholera Across the Scales: Oceanic Links to Climate and Local Estuarine Influences"
	National Oceans and Atmosphere Administration (NOAA, EE UU). M. Pascual (Universidad de Michigan, EE UU)	

13	Jan'04-Des'08	CARBOEUROPE-IP - Assessment of the EuropeanTerrestrial Carbon Cycle
	Call: Horizon 2020's 6th Framework Programme for Sustainable Development *(*FP6-2002-GLOBAL-1)	*Funding Institution*: European Commission *Project ID:* 505572
	M. Heinman (Max Plank Institute for Biogeochemistry, Alemanya)	

12	2004-2006	ICARO - Reducción de las incertidumbres en el balance del carbono peninsular mediante transectos troposféricos oscilantes
	ICARO Ministerio Ciencia y Tecnología. X. Rodó (LRC-PCB)	

11	2002-2003	CARIBE - Determinación de la concentración atmosférica de CO2 en la baja troposfera para inferir el balance de carbono sobre la Península Ibérica
	Ministerio Ciencia y Tecnología. X. Rodó (LRC-PCB)	

10	2003-2004	“Creación de la Red Temática CLIVAR-España”
	Ministerio Ciencia y Tecnología (ACES). Fiz Fernández (IIM-CSIC, Vigo)	

9	2001-2004	“Cholera and climate variability: towards prediction of disease incidence”
	National Oceans and Atmosphere Administration (NOAA, EE UU). M. Pascual (Universidad de Michigan, EE UU)	

8	2003-2004	“Programa d’anàlisi d’alta resolució, de les concentracions de CO2 en l’atmosfera per l’any 2004 (presa de mostres d’aire a Begur, Girona)”
	Departament Medi Ambient, Generalitat de Catalunya. X. Rodó (LRC-PCB)	

7	2001-2004	“Determinació de les concentracions atmosfèriques de CO2 a Catalunya”
	Servei Meteorològic de Catalunya, Departament de Medi Ambient, Generalitat de Catalunya. X. Rodó (Grup de Recerca del Clima, Universitat de Barcelona)	

6	1999-2000	“The distribution and dynamics of Vibrios in aquatic environment”
	National Oceans and Atmosphere Administration (NOAA, EE UU). M. Pascual (Universidad de Maryland, EE UU)	

5	1997-1999	“Indicadores ecológicos y paleoecológicos de cambios climáticos en una cuenca abierta y otra cerrada situadas en áreas de condiciones climáticas diferentes”
	CICYT, Ministerio de Educación y Ciencia. F. A. Comín (Departament d’Ecologia, Universitat de Barcelona)	

4	1998-1999	“Patrons de connexió climàtica entre el Pacífic Tropical i la Mediterrània”
	CIRIT, Generalitat de Catalunya (acción especial). X. Rodó (LRC-PCB)	

3	1997-1998	“Anàlisi de la incidència de l'ENSO a Catalunya”
	CIRIT, Generalitat de Catalunya, acciones especiales ACES97. F. A. Comín (Departament d’Ecologia, Universitat de Barcelona)	

2	1995-1998	“Utilización de registros lacustres de alta resolución como archivos climáticos”
	CICYT, Ministerio de Educación y Ciencia. R. Julià (Institut Jaume Almera – CSIC, Barcelona)	

1	1995-1996	“Incidencia del fenómeno El Niño en España”
	CICYT, Ministerio de Educación y Ciencia (acción especial). F. A. Comín (Departament d’Ecologia, Universitat de Barcelona)	

Current Collaborations

Current collaborating institutions include UCSD-Scripps, University of Tsukuba, University of Tokyo, Rady’s Children’s Hospital-UCSD, Univ. of Chicago, Univ. London, Center for Ocean-Land-Atmosphere/IGES, Univ. Maryland, Institut Pasteur Paris, Centro Atómico de Bariloche, INSERM, Geneva University, LSCE, ENS-Paris, ECN, Norwegian Institute for Air Research; MPI-BGC-Jena, MPI-Mainz, Princeton Univ, IRI, UColumbia, ECDC, Institut Pasteur- Cambodia, London School of Hygiene and Tropical Medicine, I. Louis Malardé-Tahiti, Freie Univ. Berlin, Kyoto University, VITOFlemisch

Technical Institute, Hospital Sant Joan de Déu, Hospital de Bellvitge, Calcutta University, Osaka University Hiroshima University and Kanazawa University.

Special Highlights

Science, Nature and the New England J. of Medicine devoted special sections in 2014 to highlight the discovery of an aerial dispersion of the Kawasaki disease etiological agent published in Rodó et al., PNAS, and termed it as a 'change in paradigm' in the area of environmental precursors of human diseases. Stemming from the same publication journals in the area of rheumatology and rheumatic diseases, where Kawasaki disease is included mentioned the study as one to potentially change the current view on these diseases (see in particular this editorial news piece at Rheumatology, http://autoinflammatorydiseases.org/rheumatology-2/kawasaki-diseaseend-rheumatology-know/).
Another interesting story was published in National Geographic. (http://phenomena.nationalgeographic.com/2014/05/19/the-disease-my-friend-isblowing-in-the-wind/)
.
Three years before the publication of this study, in 2011, Nature already devoted a highlights section ((http://www.nature.com:80/polopoly_fs/1.10374!/menu/main/topColumns/topLeftColumn/pdf/484021a.pdf) to comment on the discovery of the wind propagation the potential etiologic agent of Kawasaki disease, published in Nature Scientific Reports (Rodó et al., 2011). The fact that no human pathogen had ever been described to be windborne was raised at that time as a potential new discovery, if confirmed. (Frazer, J. 2012, Blowing in the wind. Nature, 484(5):21-23, April 2012).
Altimetric score means that the article is: The long standing relevance of both studies can be seen from their respective altimetric scores now. The 2014 study is yet now in the 99 percentile of a sample of 108622 of the 108922 tracked articles of a similar age in all journals and in the 97 percentile (ranked 19) of the 939 tracked articles of a similar age in PNAS. The Sci. Rep. study is placed in the 99th percentile (ranked 128th) of the 74,925 tracked articles of a similar age in all journals and in the 97th percentile (ranked 2nd) of the 99 tracked articles of a similar age in Scientific Reports.
Another study that stimulated a lot of attention from both the news and scientific media was the Lancet paper published on the dengue model predictions for the 2014 Soccer World Cup (e.g. BBC News Health: Brazil 2014: World Cup dengue fever risk predicted http://www.bbc.com/news/health-27441789; SciDevNet: Modelo predice riesgo de dengue durante la Copa Mundial
http://www.scidev.net/america-latina/salud/noticias/modelo-predice-riesgo-de-denguedurante-la-copa-mundial.html)
Our 2020 study on a mathematical model for COVID-19 at Nature Human Behaviour had until December 2020 over 36k visits, is in the 99th percentile (ranked 583rd) of the 292,170 tracked articles of a similar age in all journals and it has an altimetric score of 984, all in just 5 months. Similarly, our new study on the seasonality and climate links of COVID-19 had an unprecedented score of 680 in barely one month and it is yet within the 1st percentile of the most viewed articles in all times.
At the beginning of the pandemic, in spring 2020 I was appointed as task team member by the World Meteorological Organization on the assessment of the role of Meteorological and Air Quality factors in the COVID-19 pandemic, the reference advisory board of the WMO. Similarly, the EU Parliament appointed me as an expert to derive an assessment of the role of Air Quality on the COVID-19 pandemic, which was recently published.

PUBLICATIONS

140. **Rodó, X.**, Podzniakova, S., Curcoll, R., Matsuki, A., Tanimoto, H., Armengol, M., Pei. I., Vila, J., Muñoz, L., Borràs, S. (2022). Microbial Species richness in tropospheric samples above the planetary boundary layer confirms large-scale 2000-Km transport of potential human pathogens. **Nat. Eco. Evo.** (UR).

139. **Rodó, X**., Bouma, M.J, Rodriguez-Arias, M.A., Roy, M., De Yebra, P., Garcia, M., Pascual, M. (2022). Strain variation and anomalous climate synergistically influence cholera pandemics. **Proc. Roy. Soc. Lond. B Biol. Sci.** (UR) https://www.medrxiv.org/content/10.1101/2021.04.07.21255051v1

138. Lopez, L., Dommar, C., San José, A., Meyers, L., Fox, S., Castro, L., Liu, K., Wang, **X., Rodó.** (2022) Changing risk of arboviral emergence in Catalonia due to higher probability of autochthonous outbreaks from imported travellers. **Lancet Planetary Health** (UR).

137. Lopez, L., Paul, R.E., Cao-Lormeau, V.-M., **Rodó, X.** (2022). Waning immunity drives dengue dynamics. **Epidemics**. (UR).

136. San José, A., A. Fontal, **X. Rodó** (2022). Blood types and COVID-19: A population-level approach with scale relevance. **PLoS Med** (UR).

135. Sánchez-Manubens, J., Henares, D., Muñoz-Almagro, C., Brotons de los Reyes, P., Timoneda, N., Curcoll, R., Tanimoto, H., Armengol,M.P., **Rodó, X**., Borrás, S., Anton, J. (2022). Characterization of the nasopharyngeal microbiome in patients with Kawasaki disease. **Sci. Rep.** (in press).

134 **Rodó, X.,** Navarro-Gallinad, A., Kojima, T., Ballester, J., & S. Borràs (2022). Sub-weekly cycle uncovers the hidden link of Kawasaki Disease to atmospheric pollution from high-yield farming. **Nat. Sustain**. (UR) https://www.medrxiv.org/content/10.1101/2020.06.04.20122325v1.

133. Prisco Piscitelli, Alessandro Miani, Leonardo Setti, Gianluigi De Gennaro, **Xavier Rodo**, Begona Artinano, Elena Vara, Lisa Rancan, Javier Arias, Fabrizio Passarini, Pierluigi Barbieri, Alberto Pallavicini, Alessandro Parente, Edoardo Cavalieri D'Oro, Claudio De Maio, Francesco Saladino, Massimo Borelli, Elena Colicino, … Josè L.Domingo. (2022). 'The role of outdoor and indoor air quality in the spread of SARS-CoV-2: Overview and recommendations by the research group on COVID-19 and particulate matter (RESCOP commission)'. ***Environmental Research.*** 113038. https://doi.org/10.1016/j.envres.2022.113038.

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132. **Rodó X.** (2021). Pollution and the spread of Covid-19. Think Tank European Parliament. https://www.europarl.europa.eu/thinktank/en/document/EPRS_STU(2021)697192

131. Alejandro Fontal, Menno J. Bouma, Adrià San-José, Leonardo López, Mercedes Pascual & **Xavier Rodó** . (2021). Climatic signatures in the different COVID-19 pandemic waves across both hemispheres. ***Nature Computational Science***. 1:655-665. https://doi.org/10.1038/s43588-021-00136-6

130. Marcos Quijal-Zamorano, Èrica Martínez-Solanas, Hicham Achebak, Desislava Petrova, Jean-Marie Robine, François Rherrmann, **Xavier Rodó**, Joan Ballester. (2021). Seasonality reversal of temperature attributable mortality projections due to previously unobserved extreme heat in Europe. ***The Lancet Planetary Health,*** 5(9):e573-e575. https://doi.org/10.1016/S2542-5196(21)00211-4.

129. Martínez-Solanas, E., Quijal-Zamorano, M., Achebak, H., **Rodó, X**., Ballester, J. (2021). Projections of temperature-attributable mortality in Europe: a time series analysis of 147 contiguous regions in 16 countries. ***The Lancet Planetary Health,*** 5(7)e446-e454. https://doi.org/10.1016/S2542-5196(21)00150-9.

128. WMO (2021). Review on Meteorological and Air Quality Factors affecting the COVID-19 Pandemics: First Report of the WHO COVID-19 Task Team. WMO No. 1262. ISBN 978-92-63-11626-0.

127. **Rodó, X.**, San-José, A., Kirchgatter, K. et al. (2021). Changing climate and the COVID-19 pandemic: more than just heads or tails. ***Nature Medicine,*** 27:576-579. https://doi.org/10.1038/s41591-021-01303-y.

126. **Rodó X**, Fontal A. (2021). COVID-19 Pandemic Sets New Clues on the Transmission Pathways in Kawasaki Disease. ***JAMA Network Open,*** 4(4):e214624. https://doi.org/10.1001/jamanetworkopen.2021.4624.

125. **Rodó, X.,** P. P. Martinez, A. Siraj, M. Pascual (2021). Malaria trends in Ethiopian highlands track the 2000 'slowdown' in global temperatures. ***Nature Communications***. 12:1555. https://doi.org/10.1038/s41467-021-21815-y.

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123. Lopez, L. & **Rodó, X.** (2021). A modified SEIR model to predict the COVID-19 outbreak in Spain and Italy: simulating control scenarios and multi-scale epidemics. ***Results in Physics,*** 21:103746. https://doi.org/10.1016/j.rinp.2020.103746.

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122. Petrova, D., **Rodó**, **X.,** Rachel Sippy, Joan Ballester, Raul Mejía, Efrain Beltran-Ayala, Mercy J. Borbor-Cordova, G. Mauricio Vallejo, Alberto A. Olmedo, Anna M. Stewart-Ibarra, Rachel Lowe, (2020). The 2018-2019 weak El Niño: predicting the risk of a dengue outbreak in Machala, Ecuador. ***International Journal of Climatology***, 1(11). https://doi.org/10.1002/joc.6744.

121. Zaitchik, B., Sweijd, N., Shumake-Guillemot, J., Morse, A., Gordon, C., Marty, A., Trtanj, J., Luterbacher, J., Botai, J., Behera, S., Lu, Y., Olwoch, J., Takahashi, K., Stowell, J., **Rodó, X**. (2020). A framework for research linking weather, climate and COVID-19. ***Nature Comms***. 11(1):5730. https://doi.org/10.1038/s41467-020-19546-7.

120. Lopez, L. & **Rodó, X.** (2020). The end of social confinement and COVID-19 re-emergence risk. ***Nature Human Behaviour***, 4:746-755. https://doi.org/10.1038/s41562-020-0908-8.

119. Mitjà O, Arenas A, **Rodó X**, Tobias A, Brew J, Benlloch JM, et al. (2020) (5/62). Experts' request to the Spanish Government: move Spain towards complete lockdown. ***The Lancet***, 395(10231):1193-1194. https://doi.org/10.1016/S0140-6736(20)30753-4.

118. Bédard A, Antó JM, Fonseca J, Arnavielhe S, Bachert C, Bedbrook A, Bindslev-Jensen C, Bosnic-Anticevich S, Cardona V, Cruz AA, Fokkens WJ, Garcia-Aymerich J, Hellings PW, Ivancevich JC, Klimek L16, Kuna P, Kvedariene V, Larenas-Linnemann D, Melén E, Monti R, Mösges R, Mullol J, Papadopoulos NG24, Pham-Thi N, Samolinski B, V Tomazic P, Toppila-Salmi S, Ventura MT, Yorgancioglu A, Bousquet J, Pfaar O, Basagaña X; **MASK** study group. (2020). Correlation between work impairment, scores of rhinitis severity and asthma using the MASK-air® App. ***Allergy.*** https://doi.org/10.1111/all.14204.

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7. **Rodó, X.** & F.A. Comín. (2001). Links between large-scale anomalies, rainfall and wine quality in the Iberian Peninsula during the last three decades. ***Global Change Biology***, 6:267-273. https://doi.org/10.1046/j.1365-2486.2000.00299.x.

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6. Pascual, M., **X. Rodó**, S. Ellner, R. Colwell & M. Bouma. (2000). Cholera dynamics and El Niño-Southern Oscillation. ***Science***, 289:1766-1769. https://doi.org/10.1126/science.289.5485.1766.

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5. Comín, F.A., M. Cabrera & **X. Rodó**. (1999) Saline lakes: integrating ecology into their management future. ***Hydrobiologia***, 395/396:241-251. https://doi.org/10.1023/A:1017014023505.

1997

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1993

3. Comín, F.A., **X. Rodó** & M. Menéndez. (1993). Spatial heterogeneity of macrophytes in Lake Gallocanta (Aragón NE, Spain). ***Hydrobiologia***, 267:169-178. https://doi.org/10.1007/BF00018799.

2. **Rodó, X.** & F.A. Comín. (1992). Is there any trend in phytoplankton population dynamics in Lake Gallocanta?. ***Verh. Internat***, 25:1001-1004. https://doi.org/10.1080/03680770.1992.11900307.
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1992

1. Comín, F.A., **X. Rodó** & M.P. Comín. (1992). Lake Gallocanta, a paradigm of fluctuations at different scales of times. ***Limnetica***, 8:79-86.

Stays In Internationally Recognized Centres:

(2014) Noto Research Station, Kanazawa University, Japan. Visiting scientist for a collaborative project on Kawasaki disease and China winds, July 26-Aug. 2. (La Marató de TV3).

(2013) Scripps Institution of Oceanography, UCSD, La Jolla, USA. July 29-Aug. 17.
Visiting Scientist: research on ENSO and Kawasaki disease.

(2013) Copenhagen University, Fac. of Science, Copenhagen, Denmark. July 1-July 19.
Hydrological models.

(2012) Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland. July 2012.
Cholera and hydrological models.

(2011) Ministry of Health, Ankara, Turkey, Feb. 2011.
Modeling of spatiotemporal propagation of leishmaniasis in Turkey under global change.

(2010) Tsukuba University, Japan, Dec-Jan 2011.
Airborne campaign and atmospheric surface sampling over Tokyo and central Japan.

(2009) University of California-San Diego, La Jolla, USA.
Visiting Scientist. Exchange of research activities within an ongoing project on Kawasaki disease (La Marato de TV3)

(2007-2008) Climate Research Division, Scripps Institution for Oceanography-UCSD. La Jolla, California, EEUU.
Kawasaki disease and climate, Global climate variability, Mediterranean climate change.

(2006) Laboratoire d'astrophysique et géochimique. Université Catholique de Louvain. Louvain-la-Neuve. Belgium
Statistical tools for climate modelling and paleoclimatology.

(2004) Scripps Institution for Oceanography, Climate Research Division, Santa Barbara, California, EEUU (I)
Climate variability and ENSO.

(2004) Georgia Institute for Technology (Georgia Tech), School of Earth and Atmospheric Sciences, Atlanta, EE UU (I)
SW Monsoon-ENSO interaction.

(2001) University of Michigan at Ann Arbor, Michigan, EE UU (I)
Cholera and ENSO.

(2001) Center for OceanLandAtmosphere Studies (COLA), Calverton, Maryland, EE UU (A = visiting scientist)
Modelling and Analysis of the interactions between ENSO and the Asian Monsoon.

(2000) Department of Geosciences, Princeton University, Princeton, New Jersey, EE UU (P).
Climate Diagnostics.

(2000) Geophysical Fluid Dynamics Lab/NOAA, Princeton, New Jersey, EE UU (P).
Climate Modelling and Data Analysis.

(1998 – 1999) Department of Geosciences, Princeton University, Princeton, New Jersey, EE UU (P).
Tropical - Extratropical Interactions and climate modeling.

(1997) Geophysical Fluid Dynamics Lab/NOAA, Princeton, New Jersey, EE UU (P).
ENSO teleconnections: the Iberian Peninsula.

(1997) Department of Geosciences, Princeton University, Princeton, New Jersey, EE UU (P).
ENSO teleconnections: the Iberian Peninsula.

(1997) Princeton Environmental Institute, Princeton University, Princeton, New Jersey (P).
Ecological Models and temporal scales.

(1995) Laboratoire d'Astrophysique et Géochimique. Université Catholique de Louvain, Louvain-la-Neuve, Bèlgica (D).
Statistical techniques for climate modelling and paleoecology.

(1993) San Diego State University, San Diego, California, EE UU (D).
Statistics for population Ecology. Climate Ecosystems interfaces.

(1992) Limnological Research Center, University of Minnesota, Minneapolis, Minnesota, EE UU (D).
Paleolimnology and paleoclimatic modeling.

DOCTORAL THESIS

“Climate predictability: theory and impacts at seasonal and climate change timescales” (2011)
Joan Ballester Claramunt

“Local and regional influences on atmospheric CO2 dynamics in a European watershed: the river's Ebre valley.” (2011)
Anna Font Font

“Low-order climate models for enhancing predictability in the RB-EN relationship” (2017)
Desislava Petrova

Current PhD students: Alejandro Fontal, Adrià San José (2019-2022).

MASTER THESIS

-Adrián Dueñas (2019) Uncovering the role of airborne microbes in Kawasaki Disease. 1-Data Analysis. Co-director: S. Seguí. FUNDAMENTAL PRINCIPLES OF DATA SCIENCE MASTER'S THESIS, UB

-Cristina Rosich (2019) Uncovering the role of airborne microbes in Kawasaki Disease. 2-Machine learning. Co-director: S. Seguí. FUNDAMENTAL PRINCIPLES OF DATA SCIENCE MASTER'S THESIS, UB.

-Marco Gani (2019). CART ML algorithms for Kawasaki Disease Prediction (Random Forest Regression and Gradient Boosting Regression). Co-director: S. Seguí. FUNDAMENTAL PRINCIPLES OF DATA SCIENCE MASTER'S THESIS, UB.

-Albert Navarro-Gallinad (2018). AI techniques applied to the ethiology of Kawasaki Disease. UAB Dep. Appl. Mathematics MSc Thesis.

-Andrea Richter (2012) A dynamical model for dengue epidemics in childhood population in Thailand.

-Joan Ballester (2010) Predictability of El Niño-Southern Oscillation. UB Dep. Ecology MSc Thesis.

-Anna Font (2010) Airborne CO2 characterization in the Ebre Valley (Spain). UB Dep. Physics MSc Thesis.

POSTDOCTORAL ADVISOR

Salvador Pueyo (2007-2014)
Jordi Isern (Ramon y Cajal, 2008-2014)
Federic Bartomeus (Juan de la Cierva, 2007-2010)
Shujie Ma (Torres Quevedo, 2008-2010, 2011-2012)
Robert Strobl (2009-2010)
Anna Font (2011-2012)
Karina Laneri (2011-2012)
Joan Ballester (2012-2017)
Rachel Lowe (2012-2017)
Marguerite Robinson (2012-2014)
Carlos Dommar (2011-2019)
Emiliano Gelati (2011-2014)
Laura Sánchez (2011-2012)
Claudia Grossi (2012-2016)
Alba Àgueda (2014-2016)
Òscar Batet (2011-2016)
Paola Occhipinti (2011-2016)
Ben Cash (2012)
Joseph Boyard-Micheau (2014-2018)
Markel García (2014-16)
Tridip Sardar (2015)
Sílvia Borràs (2016-18)
Leonardo López (2017-)
Sofya Pozdniakova (2018-)
Desislava Petrova (2021)
Bruno Carvalho (2020-)
Ivana Cvijanovic (2021-)
Dharmendra Singh (2022-)

MEETING AND SYMPOSIA

Dec'21. **Rodó, X.** et al. Climatic signatures in the different COVID-19 pandemic waves across both hemispheres. 2021 AGU Fall Meeting Abstract ID: 854035

Dec'21. **Rodó, X.** COVID-19 and climate: an inconvenient interplay? COVID-19 Virtual Symposium, 37-MSPH Webinar, Columbia University.

Nov'21. **Rodó, X.** Impacte a Catalunya de la crisi climàtica i el canvi global. Opening seminar at the Setmana de la Ciència 2021, Fundació Catalana per a la Recerca, Parlament de Catalunya.

Nov'21. **Rodó, X.** Seasonality and the COVID-19 pandemics. TT WMO roundtable. Session Chair.

Nov'21. **Rodó, X.** et al. New airborne monitoring schemes for the detection of microbial agents of human diseases. Meta-'omics & Microbiomes weekly seminars. School of Biological Sciences, NTU

Sept'21. **Rodó, X.** Unravelling climate and air quality links of Kawasaki disease in Japan. Hiroshima University Special Seminar 21.

Jun'21. **Rodó, X.** Climate drivers of diseases with unknown etiologies: An atmospheric and AI experiment. Osaka University Invited Lectures.

Jun'21. **Rodó, X.** Compound Hazards During COVID-19. WMO TT Roundtable Seminar Series, session organizer.

May'21. Petrova, D., **Rodó, X**. et al. The 2018-2019 weak El Niño: Predicting the risk of a dengue outbreak in Machala, Ecuador. EGU General Assembly 2021: CL2.1 – Climate Services - Underpinning Science. EGU21-14259.

May'21. Marcos Quijal-Zamorano, **Rodó, X.** et al. Forecast of temperature-attributable mortality at lead times of up to 15 days for a very large ensemble of European regions. Session CL2.1 – Climate Services - Underpinning Science. PICO presentation (vPICO) at the virtual EGU General Assembly 2021: EGU21-4107.

Jan'21: EURO-KiDs-2021. **Rodó X**, Navarro-Gallinad A, Ballester J, Kojima, T., Fontal, A., Borràs S Sub-weekly cycle uncovers the hidden link of atmospheric pollution to Kawasaki Disease. Online Conference.

Dec'20: 10th International Conference on Children's Health and the Environment – **Rodó X**, Navarro-Gallinad A, Ballester J, Borràs S – Particulate matter dynamics and chemistry drive Kawasaki disease epidemiology in Japan – Amsterdam, The Netherlands (virtual).

Nov'20. Petrova, D., Achebak H, Herrmann FR, Robine JM, **Rodó X**., Ballester J, Prediction of temperature-attributable mortality in Europe at regional scale using weather forecasts with lead times up to 15 days, Blue Action General Assembly 2020, online conference,.

Sep'20: Lopez, L., **Rodó, X**., Giovanini, L., Epidemic modelling and dynamics prediction using different techniques, Ciclo de Videoconferencias IBB CONICET UNER y la FIUNER, Argentina (Online seminar).

Aug'20: Climatological, Meteorological and Environmental factors in the COVID-19 pandemic. L.López, A. Fontal, A. SanJosé, **X. Rodó**. Comparative study of population models for SARS-CoV-2: climate as a potential factor, Advancing earth and space, Online conference. AGU-WMO International Conference on the Meteorological, Climatological and Air Quality factors on COVID-19.

Aug'20: Climatological, Meteorological and Environmental factors in the COVID-19 pandemic. A. Fontal, A. SanJosé, L. Lopez, **X. Rodó**. Teasing out the role of temperature and humidity in the evolution of COVID-19 pandemic worldwide, Advancing earth and space, Online conference. AGU-WMO International Conference on the Meteorological, Climatological and Air Quality factors on COVID-19.

Jul'20, 8-9: Second Expert Meeting on "Using Climate and Weather information for predicting and preparing for cholera and vector-borne diseases", WHO, Geneva. **Rodó, X.** Cholera prediction in SE Asia: updates on the role of climate in disease dynamics".

Jun’20: **Rodó, X.** “Ciencia para el Desarrollo Sostenible: modelos de predicción de riesgos aplicados a la acción humanitaria” MAEC Ciencia y Acción Humanitaria, Madrid, Spain.

Jun’20: **Rodó, X.** “La Salut en un context de Canvi Climàtic” TERRIFICA interview.

Nov’19, 4: **Rodó, X.** Cambio Climático y Salud. Patología Ocupacional Respiratoria Simposium. VHIR, Barcelona.

Nov’19, 8: **Rodó, X.** Canvi climàtic i salut: antigues i noves malalties. Seminaris SPNC Canvi Climàtic: Estat Actual I Noves Problemàtiques, Recinte Modernista de Sant Pau.

Aug’19, 25-28: ISEE Conference - Èrica Martínez-Solanas, Desislava Petrova, **X. Rodó**, François R. Herrmann, Jean-Marie Robine, Joan Ballester - An integrated heat health early warning system for Europe, Utrecht (The Netherlands).

Jul’19: López, L, Giovanini, L, **Rodó, X** - A Leptospirosis SIR model to approach the role of past and future flood events in outbreaks emergence. Cross-sectoral ISIMIP workshop, Paris, France.

Jul’19, 1: Rodó, X. –The air we breathe: New looks at unknown etiologies of pediatric diseases. Nagasaki University, Nagasaki, Japan.

Jul’19: Lopez, L., Dommar, C., San José, A., Meyers, L., Fox, S., Castro, L., Liu, K., Wang, **X., Rodó**. Testing for future changes in the risk of emerging arboviral outbreaks in Catalonia with the epidemiological platform ArboCat, Cross-sectoral ISIMIP workshop, Paris, France.

Jun’19, 25-26: WHO First Expert Meeting “Using climate and weather information for predicting and preparing for cholera and vector-borne diseases“, WHO, Geneva, Switzerland.

Jun’19 European Urban Resilience Forum - Quijal M, Ballester J, Deluca A, Ingole V, Rodó, X., Marí Dell’Olmo M - Strategic narratives for urban heat and health - Bonn (Germany) 25 June 2019.

Apr'19: CED Seminar - Ballester J, Achebak H, Herrmann FR, Robine JM, **Rodó X** - Trends in Heat-Attributable Vulnerability and Mortality in Europe: Role of Economic Growth - Centre d'Estudis Demogràfics (CED), Bellaterra, Catalonia, Spain.

Apr’19, 7-12: EGU General Assembly 2019 – Petrova D, Ballester J, Jan Koopman S, Bordoni S, Cash B, García-Díez M, **Rodó X** – El Niño Predictability and The Western Pacific Heat Buildup – European Geosciences Union (EGU), Vienna (Austria).

Dec'18, 17-20: First Global Forum on Heat and Health – Ballester J, Achebak H, Herrmann FR, Robine JM, **Rodó X** – Recent Trends in Temperature, Vulnerability and Heat-Attributable Mortality in Europe – Hong Kong (China).

Dec'18, 11-12: General Assembly of the PUCS Project – Deluca A, Marí Dell’Olmo M, Ingole V, Quijal M, **Rodó, X.,** Ballester J – Heat Health Climate Service for Barcelona and London – Prague (Austria).

Nov'18, 27-29: General Assembly of the Blue-Action Project – Ballester J., Deluca A, Ingole, V., **Rodó, X**. – Work progress in the Temperature-Related Mortality case study – Almada (Portugal).

Nov’18: **Rodó, X** Progress on the understanding of the etiology of kawasaki Disease. University of California San Diego (USA).

Oct’18. Petrova D, Lowe, R., Ballester J, **Rodó X**. El Niño and probabilistic dengue outbreak prediction in Ecuador, IV International Conference on El Niño Southern Oscillation: ENSO in a Warmer Climate, Guayaquil, Ecuador,

Sep'18, 5-8: **Rodó X**, Borràs S, Kojima T, Curcoll R, Ballester J, Moreno T, Matsuki A, Morguí JA, International Kawasaki Disease Consortium - What the Variability and Cycles in Kawasaki Disease are Telling Us on the Nature of this Pediatric Vasculitis - 25th European Pediatric Rheumatology Congress (PReS), Lisbon (Portugal).

Sep'18, 5-8: **Rodó X**, Boyard-Micheau J, Borràs S, Cayan D, Burns J, Nakamura Y, Sánchez Manubens J, Anton J, Morguí JA, Curcoll R, Ballester J, International Kawasaki Disease Consortium - Worldwide Coherence of Association of Kawasaki Disease to Massive Agricultural Cropland Byproducts - 25th European Pediatric Rheumatology Congress (PReS), Lisbon (Portugal).

Aug'18: Ballester J, Robine JM, Herrmann FR, **Rodó X** - The 2008 recession, human mortality and its changing relationship with daily temperatures in Europe - ISES-ISEE 2018 Joint Annual Meeting, International Society of Exposure Science (ISEE) and International Society for Environmental Epidemiology (ISEE), Ottawa (Canada).

Jun'18, 3-8 - Petrova D, Ballester, J, Koopman SJ, Bordoni S, Cash B, García-Díez M, **Rodó X** - The Western Pacific Heat Buildup and its Effect on ENSO Diversity: Implications for the Timing, Magnitude and Prediction of El Niño - AOGS 2018, 15th Annual Meeting, Asia Oceanian Geosciences Society, Honolulu (Hawai).

May'18, 29-Jun,1-Jul - López, L, Giovanini, L, **Rodó, X** - Epidemiological modelling with dynamic social networks of agents with individual behaviour: an adaptive network model approach - 16th Ecology and Evolution of Infectious Diseases, Glasgow (United Kingdom).

Apr'18, 25 - Ballester J, **Rodó X** - Cold Spells and Human Mortality - IASC Workshop on Knowledge Gaps of Cryospheric Extremes, Helsinki (Finland).

Apr'18, 8-13 - Boyard-Micheau J., **Rodó X.**, Robertson L. J. & R. Sehgal – What drives Foodborne Diseases outbreak in Chandigarh? - EGU-European Geophysical Union, General Assembly 2018, Viena (Austria).

Jan'18, 18-19 - Ballester J, **Rodó X** - Work progress in the Temperature-Related Mortality case study - General Assembly of the Blue-Action Project, Bologna (Italy).

Dec'17, 11-15 - Ballester J, **Rodó X**, Robine JM, Herrmann FR – European seasonal mortality and influenza incidence due to winter temperature variability – AGU Fall Meeting 2017, American Geophysical Union, New Orleans, Louisiana, (United States).

Dec'17, 13-14 – Ballester J, Dell'Olmo MM, Ingole V – Work Progress in the Health Case Study – General Assembly of the PUCS Project , Graz, (Austria).

Dec'17, 7 – **Rodó X** - Stakeholder discussion: Climate Change Adaptation Workshop, The Climate Adaptation Innovation Roadmap (CAIR) Project - EIT House, Brussels (Belgium).

Nov'17, 29 - Dengue infections and climate change in Thailand and the French Polynesia - Institut Pasteur meeting, Nantes (France).

Nov'17, 29 - El Niño and dengue epidemic prediction in Ecuador - EPIDEMICS, Sitges (Spain)

Nov'17 - Climate Services at Work, Projects Exchange and Networking Lab – European Commission, Directorate General for Research and Technological Development, Brussels, (Belgium).

Nov'17, 20 - Joseph Boyard-Micheau, **Xavier Rodó** , Sílvia Borràs, Joan Ballester, Roger Curcoll. Poster - Etiologie de la maladie de Kawasaki: hypothèses climatiques et environnementales - Les 5ème rencontres des maladies Rares (RARE 2017), Cité des Sciences et de l'Industrie, Paris (France).

Nov'17, 5 - El Niño and dengue prediction in Ecuador - American Society of Tropical Medicine and Hygiene-ASTMH 66th Annual Meeting, Baltimore (United States).

Oct'17, 16 - Distilling the influence of climate change on infectious disease incidence - Climate Change and Infectious Diseases, Harvard Global Health Institute, Boston, Massachusetts (United States).

Oct'17, 16 - Climate Change's Impact on Pandemic Influenza Surveillance Panel Member - Harvard University, Cambridge, Massachusetts (United States).

Sep'17 - Ballester J, Dell'Olmo MM - Heat Health Climate Service for Barcelona – Stakeholder Mapping Workshop of the PUCS Project - Agència de Salut Pública de Barcelona (ASPB), Barcelona, Catalonia (Spain).

Aug'17 - 2017 Community Earth System Model (CESM) Tutorial – National Center for Atmospheric Research (NCAR), Boulder, Colorado, United States.

Jul'17, 10-12 - Ballester J, **Rodó X** - The Temperature-Related Mortality Case Study in Blue-Action – Climate Services Meeting of the Blue-Action Project, Climate Service Center Germany (GERICS), Hamburg, (Germany).

Jul'17, 6 - Deluca A, **Rodó X** - Health in climate services: the Sector Champions perspective - SECTEUR final Meeting, Barcelona – Catalonia (Spain).

Jun'17, 26-30 - Petrova D, Ballester J, Koopmans S, Bordoni S, Cash B, García-Díez M, **Rodó X** - Role of the Western Pacific Heat Buildup for the Timing, Magnitude and Prediction of ENSO - 21st Conference on Atmospheric and Oceanic Fluid Dynamics (AMS), Portland, Oregon (United States).

Jun'17, 20 – Petrova D, **Rodó X** - Improved Forecasting of El Niño Southern Oscillation with an Application to Dengue Prediction in Ecuador (oral presentation) - Barcelona Institute for Global Health Annual Scientific Retreat, Barcelona, Catalonia (Spain).

Jun'17, 20 - Boyard-Micheau J, **Rodó X** - What drives foodborne diseases outbreaks in Chandigarh (India)? Advancing towards prevention and improved prediction (oral presentation) - Barcelona Institute for Global Health Annual Scientific Retreat, Barcelona, Catalonia (Spain).

Jun'17, 14-16 - Ballester J, **Rodó X** - The Temperature-Related Mortality Case Study in PUCS - Kick-off Meeting of the PUCS Project, Antwerp (Belgium).

Jun'17, 12-16 - Shaping the Copernicus Climate Change Service to provide fit-for-purpose information for decision-making for Health SECTEUR Copernicus Tender Consortium SECTEUR GA, ECMWF, Reading (United Kingdom).

Jun'17, 5-9 - Maria Noguer, Institute for Environmental Analytics (SECTEUR coordinator) and Francesca Larosa - Providing a fit-for-purpose climate service for Europe: users' and purveyors' perspectives - 3rd ECCA Conference European Climate Change Adaptation (ECCA), Glasgow (United Kingdom).

Jun'17, 5-9 - Miller R, Payne M, Kiel K, Kolstad E, Ballester J, Lesser P, Vangsbo P – Translating advances in Arctic climate science to climate services across the Northern Hemisphere – 3rd ECCA Conference European Climate Change Adaptation (ECCA), Glasgow (United Kingdom).

May'17, 23 - **Rodó** X - Emergence of new infectious diseases in a changing climate: How models can help better understand and prevent new epidemic outbreaks - B•Debate 'Zika virus and other mosquito-borne viruses. Science for preparedness and response in the Mediterranean region, Catalonia (Spain).

May'17, 17-19 - Petrova D, Lowe R, Stewart-Ibarra A, Ballester J, Koopman SJ, **Rodó X** – Long-Lead El Niño Forecasts to Inform Public Health Decision Support Systems: Application to Predict Dengue in El Oro, Ecuador - Impact of Environmental Changes on Infectious Diseases 2017 – The Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste (Italy).

Mar’17, 17 - **Xavier Rodó** - Unravelling the etiology of Kawasaki disease from its windborne dynamics - CDIG meeting. TTMI seminar Dublin Trinity Centre for Health Sciences (TCHS), St James’s Hospital, Dublin (Ireland).

Mar’17, 17 - Ballester J**, Rodó X** - Linkages between climate variability, predictability, impacts and services - Barcelona Institute for Global Health (ISGlobal), Barcelona, Catalonia (Spain).

Mar'17, 5-8 - Deluca A, Ballester J, Lowe R, **Rodó X** - Shaping the Copernicus Climate Change Service to provide fit-for-purpose information for decision-making for Health – Copernicus Climate Change Service General Assembly, MétéoFrance, Toulouse (France).

Feb'17 - Petrova D, Lowe R, Stewart-Ibarra A, Ballester J, Koopman SJ, **Rodó X** – Climate services for the health sector: long-lead El Niño forecasts to predict dengue risk in El Oro, Ecuador – ICCS5 Climate Services Partnership. Cape Town (South Africa).

Feb'17 - Deluca A, Ballester J, **Rodó X**, and the SECTEUR consortium – Shaping the Copernicus Climate Change Service to provide fit-for-purpose information for decision-making within the Health Sector – ICCS5 Climate Services Partnership. Cape Town (South Africa).

Feb'17 - Lowe R, Ballester J, García-Díez M, Creswick J, Robine JM, Herrmann FR, **Rodó X** – Development of an early warning system for heat wave related mortality in Europe: key outcomes and lessons learnt – ICCS5 Climate Services Partnership. Cape Town (South Africa).

Feb'17 - Ballester J, **Rodó X**, Deluca A, and the BLUEACTION and PUCS consortia – Forecast Scheme of Temperature-Related Mortality for decision-making in European Regions and Cities – ICCS5 Climate Services Partnership. Cape Town (South Africa).

Jan’17, 18-20 - Ballester J**, Rodó X** - The Temperature-Related Mortality Case Study in Blue-Action - Kick-off Meeting of the Blue-Action Project, Berlin (Germany).

Jan’17, 4 **– Xavier Rodó** - Unravelling Kawasaki disease etiology from its windborne dynamics - Kawasaki Symposium at Toyama University Hospital – Toyama (Japan).

Jan’17, 2 **– Xavier Rodó** - Environmental research aimed at uncovering the microbiological determinants of Kawasaki Disease - Kyoto University, Kyoto (Japan).

Nov’16, 13-17 - Petrova D, Lowe R, Stewart-Ibarra A, Ballester J, Koopman SJ, **Rodó X** - Long-Lead El Niño Forecast Information to Support Public Health Decision Making: Application to Dengue Epidemics in Ecuador - ASTMH Annual Meeting-American Society of Tropical Medicine and Hygiene, Atlanta, Georgia (United States).

Oct’16, 5-7 - **Xavier Rodó** - Climate information and urban societal relevance. Keynote speaker - International Conference on Climate Science and Climate Services, MetOffice, Exeter (UK).

Jun’16, 16 - Ballester J, **Rodó X**, Lowe R, Deluca A - The SECTEUR COPERNICUS project: Contribution of the Health Sector - University of Reading, Reading (United Kingdom).

Jun’16, 8-10 - Desislava Petrova, Rachel Lowe, Anna Stewart-Ibarra**,** Joan Ballester, Siem Jan Koopman, **Xavier Rodó** - Long-Lead El Niño Forecast Information to Support Public Health Decision Making - Health and Climate Colloquium 2016. International Research Institute for Climate and Society (IRI), Palisades, New York (United States).

Jun’16, 19-22 - Desislava Petrova, Siem Jan Koopman, Joan Ballester, **Xavier Rodó** - Improved Forecasting of El Niño-Southern Oscillation with a Novel Structural Time Series Model - The 36th International Symposium on Forecasting, Santander (Spain).

Apr'16, 17-22 - Desislava Petrova, Siem Jan Koopman, Joan Ballester, Markel Garcia & **Xavier Rodó** - Improving the Long-Lead Predictability of El Niño Using a Novel Forecasting Scheme Based on a Dynamic Components Model - EGU-European Geophysical Union, General Assembly 2016, Viena (Austria).

Apr'16, 17-22 - Joan Ballester, Simona Bordoni, Desislava Petrova, Markel García-Díez & **Xavier Rodó** - Sensitivity of El Niño intensity and timing to the magnitude of the subsurface heat buildup - EGU-European Geophysical Union, General Assembly 2016, Viena (Austria).

Apr'16, 17-22 - Rachel Lowe, Markel García-Díez, Joan Ballester, James Creswick, Jean-Marie Robine, François R Herrmann & **Xavier Rodó** - Evaluation of an early warning system for heat wave related mortality in Europe: implications for sub-seasonal-to-seasonal forecasting and climate services - EGU-European Geophysical Union, General Assembly 2016, Viena (Austria).

Apr'16, 17-22 - Markel García-Díez, Joan Ballester, Koen De Ridder, Hans Hooyberghs, Dirk Lauwaet & **Xavier Rodó** - Do we need full mesoscale models to simulate the urban heat island? A study over the city of Barcelona - EGU-European Geophysical Union, General Assembly 2016, Viena (Austria).

Feb'16, 4 - **Rodó, X**. - Incorporating climate covariates in dengue math models, is there a gain? Examples for Thailand and the US dengue challenge - IPasteur-Cambodia, Siem Reap (Cambodia).

Nov'15 - Ballester J, Robine JM, Herrmann FR, **Rodó, X.** - Long-term projections and acclimatization scenarios of temperature-related mortality in Europe - Fall school on Statistical and mathematical tools for the study of climate extremes X - Institut d'Études Scientifiques, Cargèse (France).

Oct'15, 2 - Ballester J, Lowe R, García Díez M, **Rodó X.** - Temperature-Related Mortality: Modelling and Prediction from the Continental to the Urban Scale. NACLIM General Assembly 2015, Almada (Portugal).

Oct'15 - Grossi C, Serrano I, Camacho A, Ballester J, Morguí JA, **Rodó X**, Duch MA. - Inte Seminar Analysis of the relationship between climatic phenomena and atmospheric variability of 7Be and 210Pb concentrations in northeastern Spain - Institut de Tècniques Energètiques (Inte), Barcelona, Catalonia (Spain).

Sep'15, 7-11 - García-Díez M, Ballester J, De Ridder K, **Rodó X.** - A study of the Urban Heat Island of Barcelona using a fast urban climate model - 15th EMS Annual Meeting European Meteorological Society (EMS), Sofia (Bulgaria).

Sep'15, 7-11 - Petrova, D., Koopman, Lowe, R., Ballester, J., **Rodó, X.** - Long Lead El Niño Forecast Information to Support Public Health Decision Making. Poster - 15th European Meteorological Society Annual Meeting, Sofia (Bulgaria).

Sep'15, 21-25 - Grossi C, Serrano I, Camacho A, Ballester J, Morguí JA, **Rodó X**, Duch MA - Analysis of the relationship between climatic phenomena and atmospheric variability of 7Be and 210Pb concentrations in northeastern Spain - ENVIRA 2015 IAEA and IUR, Thessaloniki (Greece).

Set'15, 21-25 - Markel García-Díez , Joan Ballester, Koen De Ridder, Hans Hooyberghs, Dirk Lauwaet , and **Rodó, X.** - A study of the Urban Heat Island of Barcelona using a fast urban climate model. Oral Communication (Young Scientist Travel Award awarded to M. Garcia EMS) - European Meteorological Society Annual Meeting, Toulouse (Francia).

Sep'15, 29 - Lowe R, García-Díez M, Ballester J, Creswick J, Robine JM, Herrmann FR, **Rodó X.** - Evaluating the performance of a mortality model driven by an ensemble of seasonal climate forecasts - EUPORIAS General Assembly 2015, Winterthur (Switzerland).

Sep'15 - **Rodó, X**. Invitation by the Office of Science and Technology of the US White House, US Dengue Challenge Initiative, National Science and Technology Council's (NSTC). Interagency Pandemic Prediction and Forecasting Science and Technology Working Group.

Jul'15 - Ballester J, Robine JM, Herrmann FR, **Rodó X.** - Will climate warming decrease winter mortality in Europe? - Our Common Future Under Climate Change - ICSU, Future Earth and UNESCO, Paris (France).

May'15 - **Rodó, X** - Unravelling Kawasaki disease etiology from its wind-borne dynamic. Invited speaker - The Miami 'Airborne dust, Climate Change and Human Health, University of Florida, (EEUU).

May'15 - Ballester J, Robine JM, Herrmann FR, **Rodó X.** - Long-term projections and acclimatization scenarios of temperature-related mortality in Europe - Human Health in the Face of Climate Change: Science, Medicine, and Adaptation - New York Academy of Sciences, Barcelona, Catalonia (Spain).

May'15. **Rodó, X.** - Human Health in the Face of Climate Change. Science, Medicine and Adaptation Symposium. Keynote Lecture - The New York Academy of Sciences 2015, Barcelona.

Apr'15 - Ballester J, Robine JM, Herrmann FR, **Rodó X.** - Will climate warming decrease winter mortality in Europe? – Centre d'Estudis Demogràfics (CED), Bellaterra, Catalonia.

Apr'15, 12-17 - Curcoll Masanes R, **Rodó X**, Anton J, Ballester J, Jornet A, Nofuentes M, Sanchez-Manubens J, Morguí JA. - Use of Lagrangian transport models and Sterilized High-Volume Sampling to pinpoint the source region of Kawasaki disease and determine the etiologic agent - EGU-European Geophysical Union, General Assembly 2015, Viena (Austria).

Apr'15, 12-17 - Petrova D, Koopman SJ, Ballester J, **Rodó X.** - Structural Time Series Model for El Niño Prediction - EGU-European Geophysical Union, General Assembly 2015, Viena (Austria).

Apr'15, 12-17 - Lowe R, Ballester J, Creswick J, Robine JM, Herrmann FR, **Rodó X.** - A climate-driven mortality modelling tool for Europe - EGU-European Geophysical Union, General Assembly 2015, Viena (Austria).

Apr'15, 12-17 - Ballester J, Bordoni S, Petrova D, **Rodó X.** - On the relative role of meridional convergence and downwelling motion during the heat buildup leading to El Niño events - EGU-European Geophysical Union, General Assembly 2015, Viena (Austria).

Mar'15. **Rodó, X**. - Effective integration of climate information in infectious disease models. Invited speaker. IECID International Conference. Sitges.

Nov'14, 5-7 - Alba Àgueda, Paola Occhipinti, Josep-Anton Morguí, Roger Curcoll, Manel Nofuentes, Claudia Grossi, Oscar Batet, Lídia Cañas, **Rodó, X.** - Sample air system implemented at three stations of the IC3 climatic monitoring network - Seventh International Symposium on Non-CO2 Greenhouse Gases (NCGG7), Amsterdam (Netherlands).

Nov'14, 5-7 - Paola Occhipinti , Alba Àgueda, Josep-Anton Morguí , Oscar Batet, Lídia Cañas, Roger Curcoll, Claudia Grossi, Manel Nofuentes, Rodó, X - Atmospheric methane measurements at the Sierra de Grazalema Natural Park - Seventh International Symposium on Non-CO2 Greenhouse Gases (NCGG7), Amsterdam (Netherlands).

Set'14, 24-26 - Lídia Cañas, Alba Àgueda, Paola Occhipinti, Claudia Grossi, Roger Curcoll, Manel Nofuentes, Oscar Batet, **Rodó, X**., Josep-Anton Morguí - The Ebre River Delta (NW Mediterranean): A case study for Climate Change vs Anthropic Management - Deltas In Times Of Climate Change II International Conference Rotterdam (Netherlands).

Jul'14, 7-9 - Claudia Grossi, F. R. Vogel, Josep-Anton Morguí, Roger Curcoll, Alba Àgueda, Oscar Batet, Manel Nofuentes, Paola Occhipinti, Arturo Vargas, **Rodó, X.** - First estimation of CH4 fluxes using de 222Rn Tracer Method over the central Iberian Peninsula - 22nd International Conference on Modelling, Monitoring and Management of Air Pollution, Opatija (Croacia).

Apr'13, 7-12 - Grossi, C., **Rodó, X.** et al. - Continuous atmospheric 222Rn concentration measurements to study surface-air exchange at the station of Gredos and Iruelas, in Central Spain. accepted in AS2.1. - EGU-European Geophysical Union, General Assembly 2013, Viena (Austria).

Apr'13, 7-12 - Morgui, JA., **Rodó, X.** et al. - ClimaDat: A long-term network to study at different scales climatic processes and interactions between climatic compartments accepted in BG1.3 - EGU-European Geophysical Union, General Assembly 2013, Viena (Austria).

Apr'13, 7-12 - Gelati, E., **X. Rodó** et al. - Benchmarking the SMOS upper soil moisture product with a land surface model over the Iberian Peninsula by accepted in HS6.1/OS4.9 - EGU-European Geophysical Union, General Assembly 2013, Viena (Austria).

Feb'13, 13-15 - **Rodó, X.** - Resolving the interplay between climate forcing, transmission, host immunity and intervention measures in dynamic approaches to infectious diseases. Plenary Talk - Fourth Workshop Dynamical Systems Applied to Biology and Natural Sciences | DSABNS 2013. Centro de Matemática e Aplicações Fundamentais, Lisbon University.

Feb'13, 13-15 - Dommar, C., Lowe, R., Robinson, M., **Rodó, X.** - An agent-based model driven by tropical rainfall to understand the spatio-temporal heterogeneity of a chikungunya outbreak. Invited Talk - Fourth Workshop Dynamical Systems Applied to Biology and Natural Sciences | DSABNS 2013. Centro de Matemática e Aplicações Fundamentais, Lisbon University.

Feb'13, 13-15 - **Rodó, X.** - Session Chair. Fourth Workshop Dynamical Systems Applied to Biology and Natural Sciences | DSABNS 2013. Centro de Matemática e Aplicações Fundamentais, Lisbon University.

Mar'13, 12-14 - Alba Àgueda, Roger Curcoll, Josep-Anton Morguí, Oscar Batet, Claudia Grossi, Manel Nofuentes, Paola Occhipinti, Rosa Arias, **Rodó, X.** - CH4, CO2, CO, N2O, SF6 atmospheric continuous measurements at the Ebre river Delta station (DEC3) - InGOs Annual Meeting Bremen (Alemanya).

2012 - **Rodó, X.**, Morguí, J.-A., Àgueda, A., Batet, O., Curcoll, R., Nofuentes, M., Occhipinti, P., Sánchez-García, L., Arias, R., Ealo, M. and Grossi, C. - The ClimaDat project: a unique network of sites for Climate-Biosphere Research focused in their interactions through the climate energy main exchange pathways. In: Planet Under Pressure 2012. (http://www.planetunderpressure2012.net/).

Nov'12 - **Rodó, X.**, F. Doblas-Reyes, M. Davis, R. Lowe, C. Saut - Climate Services at IC3 - EUPORIAS kick-off meeting, Barcelona.

Oct'12, 26-27 - Lowe, R, J. Ballester, C. Saut, **X. Rodó** - Climate Services for Health. A Dialogue for Climate Services Users and Providers: Towards Implementation of the Global Framework for Climate Services (GFCS) - Centre International de Conférences Genève, Geneva (Switzerland).

Oct'12, 23-25 - Lowe, R. J. Chirombo, A. M. Tompkins, **X. Rodó** - A statistical modelling approach to identify the importance of climate as a driver of malaria in Malawi - QWeCI Annual Meeting, International Livestock Research Institute, Nairobi (Kenya).

Set'12, 28 - Gelati,E., **Rodó, X.** - Water management scenarios for the case study river catchments of the VIROCLIME project - VIROCLIME Scientific Technical Management Board meeting, Budapest (Hungary).

Set'12, 28 - Dommar, C., **Rodó, X.** - Projections of Viral Loads by Coupling Hydrological modelling, Climate Change Projections, and Water Management Scenarios with Multiple Regression Models of Viral Concentrations for the Watersheds investigated in the ViroClime Project - VIROCLIME Scientific Technical Management Board meeting Budapest (Hungary).

Aug'12 - **Rodó, X.** - Mathematical models for climate-driven diseases. Invited Speaker - The Russian Federation Symposium on emerging threats in zoonotic diseases, RAS, Moscow.

Jul, 12, 6 - Lowe, R, J. Chirombo, A. M. Tompkins, **X. Rodó** - A combined statistical-dynamical approach to modelling spatio-temporal variations of malaria risk - 4th AMMA International Conference, Toulouse, (France).

Jun'12, 2 - **Rodó, X.** - Modeling cholera dynamics in the Ganges-Brahmaputra-Meghna deltas. Keynote speaker - EPFL-cholera modeling workshop, Lausanne (Switzerland).

Mar'12, 3. Gelati,E., **Rodó, X.** - Hydrological modelling and climate change projections for the case study river catchments of the VIROCLIME project - VIROCLIME consortium meeting, Rio de Janeiro (Brasil).

Mar'12, 27 - Dommar, C., **Rodó, X.** - Multiple Regression Modelling of Viral Concentration on Environmental Explanatory Variables for the Watersheds investigated in the ViroClime Project - VIROCLIME Consortium Meeting Rio de Janeiro (Brasil).

Des'10, 14 **- Rodó, X.** - Top-down vs bottom-up approaches in climate-sensitive disease models: implications for disease prediction. Invited talk / Invited section talk - Eurobrisa – A Euro-Brazilian initiative for improving South American Seasonal forecasts, Barcelona. Spain.

Abr'08, 13-18 - Font, A., Curcoll, R., Morguí, J.A., **Rodó, X**. - Mixing processes and spatial relationships between sites along the 42oN parallel in the Iberian Peninsula using atmospheric dispersion particle patterns - EGU- European Geophysical Union, General Assembly 2008, Viena (Austria).

Abr'08, 13-18 - Curcoll, R., Font, A., Morguí, J.A., Pouchet, I., Rodríguez, M-A., **Rodó, X**. - Spring Summer atmospheric CO2 variability in La Muela tall tower site in relation to wind back trajectories - EGU-European Geophysical Union, General Assembly 2008, Viena (Austria).

Des'07 - **Rodó X.** - Potential links between Kawasaki Syndrome and climate variability in Japan - Scripps-UCSD Winter seminars. La Jolla, California (EEUU).

Oct'07 - **Rodó X.**, M.A. Rodriguez-Arias - Dynamics of spatial propagation of cholera in former Bengal: Development of a conceptual model for the interplay between cholera and climate - Guyot Hall, Princeton Ecology Lab seminars, Princeton University (EEUU).

Oct'07, 7-12 - Morguí, J.A., Font, A., Curcoll, R., Pouchet, I., Rodríguez, M-A., **Rodó, X.** - The carbon print in the Ebre watershed: Measurements across the Iberian Peninsula along the 42oN parallel - 5th CarboEurope-IP Project Meeting in Poznan (Poland).

Jun'07, 4-7 - **Rodó X.** - Exploring potential sources of seasonal predictability for climatedriven diseases - WCRP Seasonal Prediction Workshop, Barcelona, España.

Abr'07, 15-20 - Font A., Morguí, J.A., **Rodó X.** - Assessing the spatial coverage of aircraft CO2 measurements in the Iberian Peninsule. Póster – EGU-European Geophysical Union, General Assembly 2007, Viena (Austria).

Mar'07, 28 - **Rodó X.** - Climate-driven infectious disease dynamics: understanding the past, forecasting the future. Disease models for public health in Europe - European Center for Disease Prevention and Control (ECDC).

Nov'06, 14-17 - **Rodó X.** - Seminar on Climate, Populations and new and reemerging diseases - Cosmocaixa Science Museum, Barcelona.

Nov'06, 13-14 - Font A., Morguí, J.A., **Rodó, X.** - Different atmospheric CO2 spots in the NE Spain associated with high regime turbulence weather. Póster - 4th Annual CarboEurope-IP Meeting. Creta, (Grecia).

Nov'06, 9-11 - **Rodó X.** - Unexplored sources of high resolution data in historic time - Convener in Workshop ESF-MEDCLIVAR, Carmona, Sevilla.

Set'05, 23-30 - Morgui, J.A., **Rodó, X.**, Font, A., Martí, E., Pouchet, I., Rodríguez-Arias, M.A., Ramonet, M., Rosés, N., Schmidt, M. - Looking for the marine CO2 processes on land - ICDC7, Boulder, Co. (EEUU).

Set'05, 12-13 - **Rodó X.** - Seasonal and interanual dynamics in the generation of cholera epidemics in India. - Seasonal Climate Forecast for Health Early Warming, Wengen (Suiza).

Set'05-Jun'05 - **Rodó X.** - Global Change and Infectious Disease, NCEAS, Sta. Barbara, California (EEUU).

Jun'04, 21-25 - Rodríguez-Arias, M.A., **Rodó, X.** - The study of transitory climate forcings in geophysical time-series using the Scale Dependent Correlation (SDC) analysis. Póster - CLIVAR-2004, 1st International CLIVAR Scientific Conference, Baltimore, Maryland (EEUU).

Jun'04, 21-25 - **Rodó, X.**, Rodríguez-Arias, M.A. - The use of Scale Dependent Correlation (SDC) analysis maps to highlight the predominant role of transitory processes in most interactions within the Tropics and within Mid-latitudes. Póster - CLIVAR-2004, 1st Int. CLIVAR Science Conference, Baltimore, Maryland (EEUU).

May'04, 17-19 - **Rodó X.**, Rodriguez-Arias M.A. - ENSO and the Mediterranean: The need of new statistics to detect transitory forcings. Ponencia - MEDCLIVAR, ESF exploratory workshop, Roma (Italia).

Apr'04, 25-30 - **Rodó X.**, Pascual M., Bouma M., Rodríguez-Arias M.A. - On the role of Climate variability in the dynamics of infectious diseases: approaches to integrate both intrinsic and extrinsic factors in the dynamics of cholera epidemics. In: Geophysical Research Abstracts, Vol. 6, 07469 (EGU04-A-07469). Ponencia – EGU-European Geosciences Union, 1st General Assembly, Niza (Francia).

Apr'04, 25-30 - Rodríguez-Arias M.A., **Rodó X.**, Morguí J.A. - Far-distance climate forcing of rainfall: the need of statistical techniques capable to detect non-continuous temporal interactions. In: Geophysical Research Abstracts, Vol. 6, 07508 (EGU04-A-07508). Ponencia – EGU-European Geosciences Union, 1st General Assembly, Niza (Francia).

Apr'04, 25-30 - **Rodó X.**, Rodríguez-Arias M.A. - Developing a strategy to detect the actual influence of the Tropics on Mediterranean Climate Variability. In: Geophysical Research Abstracts, Vol. 6, 07568 (EGU04-A-07568). Ponencia – EGU-European Geosciences Union, 1st General Assembly, Niza (Francia).

Apr'04, 25-30 - **Rodó X.**, Rodríguez-Arias M.A. - Inconsistencies in the reconstruction of climate variability from paleoclimatic proxies: the effect of data resolution and statistical methodology. In: Geophysical Research Abstracts, Vol. 6, 07484 (EGU04-A- 07484). Póster – EGU-European Geosciences Union, 1st General Assembly, Niza (Francia).

Apr'04, 25-30 - Morguí J.A., A. Font, M.A. Rodríguez-Arias, **X. Rodó** - A theoretical model for land-atmosphere CO2 interchanges that include some forgotten non-physiological effects of biological activity. In: Geophysical Research Abstracts, Vol. 6, 07567 (EGU04-A-07567). Póster – EGU-European Geosciences Union, 1st General Assembly, Niza (Francia).

2003 - **Rodó X.** - Seasonality and the population dynamics of infectious diseases. Ponencia invitada - Workshop on climate and infectious diseases. National Center for Ecological Analysis and Synthesis (NCEAS), Univ. of California at Santa Barbara, Santa Barbara, California (EEUU).

May'03, 20-30 - **Rodó X.**, Rodríguez-Arias M.A. - New applications of time series methods to advance in the understanding of interactions between climate and infectious diseases. Ponencia invitada - IX Conferencia Española de Biometría, La Coruña.

Feb'03, 13-18 - Pascual M., Koelle K., **Rodó X.** - Ecology of Cholera: Spatial coupling and climate variation. Ponencia invitada - Ecology of Infectious Diseases. AAAS Meeting, Denver (US).

Set'02, 2 - **Rodó, X.** - Cholera and climate in Bangladesh: An overview of current and past relationships in an endemic region. Ponencia invitada - Environment catastrophes and recoveries in the Holocene, Brunel University, London (UK).

Feb'02, 28 - **Rodó, X.** - El cambio climático en la dinámica de enfermedades infecciosas emergentes. Ponencia invitada. III Congreso de la Sociedad Española de Medicina Tropical y Salud Internacional, Cuenca.

Aug'01, 5-10 - Pascual M., Roy M., Dobson A., **Rodó X.**, Bouma M. - Synchronicity, temporal scales and the role of the environmental reservoir in cholera dynamics. Ponencia invitada - The Ecological Society of America 86th Annual Meeting, Madison, Wisconsin (EEUU).

2001 - **Rodó X.** - Cholera dynamics, the El Niño-Southern Oscillation phenomenon and the monsoon system. Ponencia invitada - Workshop meeting NOAA-NSF, Univ. Of Michigan at Ann Arbor, Detroit (EEUU).

2000 - **Rodó X.** - Studies of interannual tropical-extratropical interactions. Ponencia invitada - GFDL/NOAA Seminars. GFDL, Princeton, New Jersey (EEUU).

2000 - **Rodó X.** - Climate research in Southern Europe. Ponencia invitada - International Research Institute (IRI) for Climate Prediction Seminars. Columbia University, New York (EEUU).

2000 - **Rodó X.** - Investigating the role of climate in cholera dynamics. Ponencia invitada - COMB-Biotech Institute Seminars, University of Maryland, Maryland (EEUU).

2000 - Rodríguez-Arias M.A., **Rodó X.** - Scale-Dependent Correlation (SDC) Analysis: A new statistical tool in the time domain to identify transient signals in ecological and climatic series at different scales. Ponencia invitada - Seminarios de la Societat Catalana de Biología, Barcelona.

2000 - **Rodó, X.** - Fluctuaciones del clima Mediterráneo: conexiones globales y consecuencias regionales. In: Ecosistemas Mediterráneos: Análisis Funcional. R. Zamora and J. Puigdefàbregas (eds.) CSIC-AEET Nº 32. pp.1-3. Ponencia inaugural invitada - 1er Congreso de la Asociación española de Ecología Terrestre: Aspectos funcionales de los ecosistemas mediterráneos, Granada.

Apr'00, 24-29 - Rodríguez-Arias, M.A., **Rodó, X.** - Scale-Dependent Correlation Analysis (SDC). A new time-domain technique to identify transient signals at several scales. In: European Geophysical Society Newsletters 74:272. Ponencia - Congreso de la European Geophysical Society (EGS). XXV General Assembly, Niza (Francia).

Apr'00, 24-29 - **Rodó, X.** - Reversal of atmospheric fields linking SST anomalies. In: European Geophysical Society Newsletters 74:179. Ponencia - Congreso de la European Geophysical Society (EGS). XXV General Assembly, Niza (Francia).

Des'99, 1-3 - **Rodó, X.**, Comín F.A. - Tropical-Extratropical connections. The role of tropical atmospheric bridges. Ponencia - I Congreso de la Asociación Española de Climatología, Barcelona.

Des'99, 1-3 - Rodríguez-Arias, M.A., **Rodó X.** - Análisis de correlación dependiente de la escala (SDC): Una nueva herramienta estadística y gráfica para la detección de discontinuidades y señales transitorias. Ponencia - I Congreso de la Asociación Española de Climatología, Barcelona.

1999 - Comín, F.A., **Rodó, X.**, Romero, J.A., Menéndez, M. - Aplicaciones de las teorías ecológicas a la gestión del agua y de los ecosistemas acuáticos. Ponencia - Congreso Ibérico sobre planificación y gestión de Aguas, Zaragoza.

May'99 - **Rodó, X.** - Transient analysis in climate-health interactions: Cholera as a case study. Ponencia invitada - Climate and health diagnostic NOAA Workshop, Sea Crest, North Falmouth, Massachusetts, (EEUU).

1999 - **Rodó, X**. - Tropical-Extratropical connections and the climate of midlatitudes. Ponencia inaugural invitada - Global Climate Meeting, Barcelona.

Apr'99, 2-5 - **Rodó, X**. - Global warming and climate change. Climate change: Present, past and future of Kyoto Protocol. Ponencia invitada - GENIe European Office Meeting, Terrassa, Barcelona.

Feb'99, 1-5 - **Rodó X.**, Pascual M. - Cholera dynamics and rainfall variability: an on-off relationship driven by ENSO? Ponencia invitada - ASLO Aquatic Sciences Meeting, Santa Fe, New Mexico (EEUU).

1999 - **Rodó X**. - Social Impacts of global climate change. An environmental diagnostics of our changing planet. Ponencia - UNESCO chair conferences, Terrassa, Barcelona.

Set'98, 4-8 - **Rodó X.** - On the use of unusual diagnostic tools for plankton populations of not stationary ecological systems. Póster - Alcalà International Congress of Mathematical Ecology, Alcalá de Henares.

Apr'98, 12-17 - Giralt, S., Julià, R., Burjachs, F., **Rodó, X.,** Comín, F.A. - Reconstruction of lake level changes based on mineralogical composition of sediments. Ponencia - 15th International Sedimentological Congress, Alicante.

Mar'98, 14-18 - **Rodó X**. - The role of large-scale climatic events in the evolution of ecosystems in E. Spain. Ponencia invitada - Land Use and Land Cover Change Meeting, Barcelona.

1997 - Burjachs, F., F.A. Comín and **X. Rodó** - Gallocanta: Ejemplo de secuencia palinológica en una laguna efímera - XI Simposio de Palinología (APLE). Estudios Palinológicos.

Mar' 96, 11-15 - Comín, F.A. & **Rodó, X.** - La laguna de Gallocanta: Paradigma de las fluctuaciones temporales de los procesos ecológicos - XII Bienal de la Real Sociedad Española, Historia Natural, Actas de la Real Sociedad Española de Historia Natural.

May'96, 27-31 - Giralt, S., **Rodó, X.**, Plana, F., Julià, R. & Comín, F.A. - Sedimentary records of saline lakes and their relationship to climatic changes. Ponencia - VIII Congreso Español de Limnología, Sòller Mallorca.

Feb'94, 21-25 - **Rodó X.** & Comín, F.A. - Long-term monitoring of plankton populations in a saline lake. Ponencia - ASLO & PSA Joint Meeting, Miami, Florida (EEUU).

1992 - **Rodó X.** - Fluctuations in population dynamics at different time scales in Spanish saline lakes. Ponencia - Limnological Research Center Workshop, Univ. of Minnesota, Minneapolis (EEUU).

1992 - **Rodó X.** Lake Gallocanta, a paradigm of fluctuations at different scales of times - Ponencia - XXV SIL International Congress, Barcelona.

1992 - **Rodó X.** & Comín, F.A - Is there any trend in phytoplankton population dynamics in Lake Gallocanta? Póster - XXV SIL International Congress, Barcelona.

1992 - **Rodó X.** & Comín, F.A - Time scales in the perception of zooplankton population dynamics in Lake Gallocanta. Ponencia - XXV SIL International Congress, Barcelona.

1992 - **Rodó X.** & Comín, F.A - Time scales in the perception of zooplankton population dynamics in Lake Gallocanta. Ponencia - Aquatic Ecology: Scale, Pattern and Process Meeting, Cork (Irlanda).

Set'91, 9-13 - **Rodó X.** & Comín, F.A. - Estructura y dinámica del plancton de la laguna de Gallocanta durante 1981. Póster - VI Congreso Español de Limnología, Granada.

PARTICIPATION IN COMMITTEES AND INTERNATIONAL REPRESENTATIONS

(2021-2023) Specially Appointed Visiting Professor, Osaka University (Japan).
(2020) Scientific Organizing Committee Member WMO-WHO-AGU Symposium on the role of Meteorological, atmospheric and air quality factors on COVID-19.
(2020-2021) TT SC Member, WMO Expert Panel on MAQ Factors and COVID-19 (18 months mandate),
(2020-2021) EU PARLIAMENT STOA Commission for Technical Rapport on Pollution and COVID-19) 2020-21.
(2020-2022) International Advisory Group Member, 3X Projecte Tres Xemeneies St. Adrià del Besós-Badalona.
(2020-2021) Union for Mediterranean Technical Expert Group (Health-Climate Change-Renewable Energies).
(2020-2021) IPCC AR6 WGII Expert Reviewer.
(2019-) EBM PLos Neglected Tropical Diseases.
(2020-) EBM PLos Climate.
(2011-2019) Editorial Board Member of Nature Scientific Reports- 'Earth & Environmental Sciences
(2012-present) Advisory Board Member, Observatoire Pyrénéen du Changement Climatique (OPCC), Comm. Travail des Pyrénées, Toulouse, France.
(2011) SSC Member of the Drought Integration group of the World Climate ResearchProgram.
(2008) Advisor of the European Center for Disease Control (ECDC) para la implementación de la E3 Network, November 2008
(2007) Advisor of the European Center for Disease Control (ECDC), March 2008
(2007)WCRP Workshop on Seasonal Prediction
• Scientific Organising Committee
• Local Organising Committee
(2005 – 2007) IPCC, 4th Assessment Report Expert Reviewer del WGI y del WGII
(2005 - 2007) IPCC, 4th Assessment Report Contributing Author del WGII
(2003 - 2006) CLIVAR-ESPAÑA, CoChair of the Network CLIVAR-España
(2003 - 2008) MEDCLIVAR, Member of the Scientific Steering Committee

OTHER MANAGERIAL ACTIVITIES

- ECOMMS local organizing committee, Barcelona, Nov. 6-11, 2012.
- ECOMMS Implementation meeting (SPECS, NACLIM, EUPORIAS), Nov. 6-11, Barcelona
- Official launch of eight new climatic observatories of the Climadat Project throughout the Iberian Peninsula and the Canary Islands (IC3-Obra Social La Caixa), 2013.
- MoU established between ISGlobal and IC3 for the settling of a new collaborative research line on Climate Change and Infectious Diseases in tropical countries, January 2013.
- Sulian Thual Thesis Committee, LODYC-Univ. Toulouse, Oct. 2012.
- Organization of scientific session: Advancing towards an increase in ENSO predictability, 12 June 2012, "Manuel Arranz" Poblenou Library Barcelona.
- Scientific Organizer of the Conference 'Human Health in the Face of Climate Change: Science, Medicine and Adaptation', The New York Academy of Sciences 2015 Symposium, Barcelona, May 2015.
- Member of the Scientific Council of the Project Observatoire Pyrénéen du Changement Climatique (OPCC) www.opcc-ctp.org
- Climate Change Challenge Big Data for the city Organizer. Pla Clima Barcelona, 2018-2019. http://climate-challenge.herokuapp.com/
- Cimera Catalana d'Acció Climàtica, Scientific Committee Member, 2019.
- Launching of the new AIRLAB Core Facility at ISGlobal for the research on aerial chemistry/physics/biology and human health (Oct. 2019).
- Agence Nationale de Recherche SEC35 Expert Evaluation Panel Member, 2018-2019, Paris, France.
- Co-autor proposta Plà desconfinament (Coordinació: Dr. O. Mitjà), May 2020.
- Evaluation Committee Member, Dr. D. Béran, Assistant Res. Prof. Univ. Geneve, Switzerland (Nov. 2020).
- Reviewer for Nature, Sci. Adv., Nature Comms., Nature Clim. Change, JAMA, PLoS Negl. Trop. Dis., Nature Human Behaviour, Nature Sci. Data, One Health, PLoS ONE, J. Med. Entomol., Arch. Dis. Childhood, Phys. A, IJERPH.

- Press interviews for more than 50 different media (e.g. TV3, TV2, TV1, A3, Cuatro, T5, El Mundo, El Punt, ARA, La Vanguardia, El País, El Periódico, El Temps, Le Point, CNN, National Geographic, NHK Japan, Euronews, BBC …)
- Commissioned article for Nature Medicine (2020): Climate Change and the post-COVID-19 pandemics.
- Exceptional media coverage of our Nature Computational Science study in 2021, with an estimated audience of 34,6 million people and a press estimated value of 941 million euros.