

ICRA Frontier School 2025

Learn from world-class scientists
Dive into pioneering water research
Explore Girona's vibrant scene

26th to 30th May 2025



Welcome to ICRA Frontier School

Join us for an immersive Frontier School hosted by the Catalan Institute for Water Research (ICRA), designed for early-career researchers passionate about tackling global water pollution challenges.

This isn't your standard summer school with long, passive lectures and minimal interaction. Instead, we're redefining the experience with a dynamic, modern format. Picture this: presentations delivered by world-class scientists at the forefront of their fields, ample time for lively debates, and interactive sessions designed to challenge and engage participants.

Alongside the top-notch intellectual experience, the event will be infused with local flavour, allowing you to enjoy the beautiful scenery of Girona and Costa Brava, including a site visit to the demonstration facility in Roses.

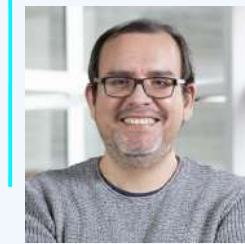


ICRA is a global leader in **water cycle research**, focusing on water resources, quality, and treatment technologies, with a commitment to knowledge transfer to society and industry.

Meet the organizing and scientific committee



Mira Petrovic
Chair
Research Professor



Jose Luis Balcazar
Research Scientist



Lluís Corominas
Research Scientist



Wolfgang Gernjak
Research Professor



Meritxell Gros
Research Scientist



Jelena Radjenovic
Research Professor

Our modules (1/2)

Module 1

Emerging Contaminants: Challenges, Trends, Advanced Analytical tools, and Human Exposure Assessment



This module will explore the latest trends in environmental analytical chemistry, addressing the challenges associated with the detection of various classes of emerging contaminants in environmental matrices. Participants will gain insights into state-of-the-art analytical tools for contaminant identification and learn about methodologies for evaluating human exposure and assessing the associated risks.

Module 2

Microbiology: From basic concepts to applications towards public health challenges

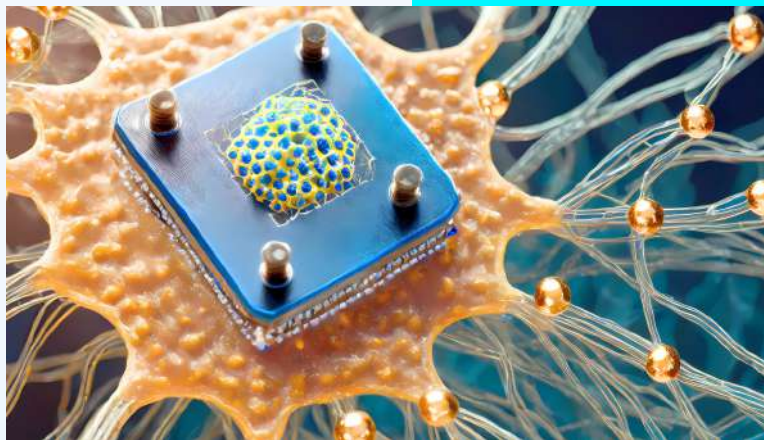


How can microbiology help address the growing global public health challenges? To answer this, we will discuss the role of microbiology, from traditional approaches to advanced sequencing technologies and bioinformatics, in addressing urgent public health challenges, including the emergence and spread of antimicrobial resistance and pathogens. Special emphasis will be placed on wastewater-based surveillance as a key indicator of public health.

Our modules (2/2)

Module 3

Advanced technology and Nanotechnology enabled water treatment



This module focuses on advanced technologies for water and wastewater treatment, and on how nanotechnology can help address the presence of persistent chemicals such as per- and polyfluoroalkyl substances (PFAS) in water. Special emphasis will be placed on the development of multifunctional engineered nanomaterials to enhance the performance of existing advanced water and wastewater treatment systems, as well as to deliver next-generation technologies.

Module 4

Exploitation, communication and dissemination of research results



This module equips participants with skills to effectively communicate and disseminate research outcomes. It includes expert talks from researchers who have successfully translated their work into spin-offs, along with a practical exercise where participants pitch their project or research. A jury of experts will evaluate the pitches and provide feedback, helping participants improve their communication and transfer skills for diverse audiences, including stakeholders and investors.

Site visit

Advanced treatment in real life

This visit offers a unique opportunity to explore cutting-edge water treatment technologies in the vicinity of Girona, Costa Brava.

The first stop is the drinking water treatment plant in Figueres, operated by Fiserza (www.fiserza.cat). This state-of-the-art facility incorporates advanced processes such as ozonation and granular activated carbon filtration. Experts from Fiserza will present the plant's operations and its latest innovations, focusing on the implementation of advanced control strategies to enhance treatment efficiency.



The journey then continues towards the WWTP Roses, located on the stunning Costa Brava coastline. Here, CACBGi – Consorci d'Aigües Costa Brava Girona (www.cacbgi.cat) is leading the AIGUANEIX project (aiguaneix.cacbgi.cat/en), a pioneering initiative in water reclamation. This project is demonstrating an advanced treatment process designed to produce high-quality reclaimed water suitable for aquifer recharge. The system, housed in an experimental container, includes ultrafiltration, double-pass reverse osmosis, advanced oxidation, granular activated carbon filtration, and remineralization. Participants will gain first-hand insights into the technology and the broader impact of the project.



ICRA FRONTIER SCHOOL PROGRAMME 2025

Monday, May 26th	Tuesday, May 27th	Wednesday, May 28th	Thursday, May 29th	Friday, May 30th
<p>Welcome to ICRA Frontier School Speaker: Vicenç Acuña & Mira Petrovic (ICRA) Time: 9.00-9.05</p>		<p>Transfer to Figueras Visit Fisera: drinking water treatment plant, which is state-of-the-art including among other technologies, ozonation and granular activated carbon filtration.</p> 	<p>Welcome and overview of Module 3 Speaker: Wolfgang Gernjak (ICRA) Time: 9.00-9.30</p>	<p>Welcome and overview of module 4 Speaker: Lluís Corominas (ICRA) Time: 9.00-9.05</p>
<p>Welcome and overview of Module 1 Speaker: Meritxell Gros (ICRA) Time: 9.05-9.15</p>	<p>Welcome and overview of Module 2 Speaker: Jose L. Balcazar (ICRA) Time: 9.05-9.15</p>		<p>Electrochemistry as an interface for nanotechnology-enabled water and wastewater treatment Speaker: Jelena Radjenovic (ICRA) Time: 9.30-10.15</p>	<p>Mastering Scientific Communication: Tips for Clarity, Impact, and Engagement Speaker: Albert Gibert (Freelancer, expert on communication) Time: 9.05-9.50</p>
<p>From cradle to grave or forever living in the water cycle? Analytical strategies, monitoring and risk evaluation of anthropogenic substances of different molecular weight Speaker: Thomas P. Knepper (Hochschule Fresenius, University of Applied Sciences, Germany) Time: 9.15-10.15</p>	<p>Antimicrobial resistance in the wastewater ecosystem: sources, drivers and risks Speaker: Célia Manaia (Universidade Católica Portuguesa) Time: 9.15-10.15</p>	<p>Transfer to Roses Visit the WWTP Roses: where CACBGi – Consorci d'Aigües Costa Brava Girona currently carries out a demonstration project that produces reclaimed water fit for injection in potable aquifers in an important lighthouse project.</p> 	<p>Functionalized graphene-enabled electrochemical systems for the degradation of per- and polyfluoroalkyl substances (PFAS) Speaker: Elisabeth Cuerdo (ICRA) Time: 10.15-11.00</p>	<p>Pitch Your Research: Sharpen Your Message for Impact. Work in groups to prepare a compelling pitch. A jury of experts will evaluate your presentation Jury: Lluís Corominas (ICRA) and Sady Drammeh (Communication and Outreach, ICRA), Albert Gibert (Freelancer expert on communication) Time: 9.50-11.15</p>
<p>(Micro)plastics and plastic additives in the Environment: Analytical challenges and Solutions Speaker: Sara Rodriguez-Mozaz (ICRA) Time: 10.15-11.00</p>	<p>Tackling antimicrobial resistance through the One Health approach Speaker: Carles M. Borrego (UdG & ICRA) Time: 10.15-11.00</p>		<p>Coffe break Time: 11.00-11.30</p>	<p>Coffe break Time: 11.00-11.30</p>
<p>Cutting-Edge LC-(HR)MS Methods for Analyzing Contaminants of Urban, Agricultural, and Industrial Origins: From Target and Suspect Screening to Non-Target Analysis Speaker: Mira Petrovic & Meritxell Gros (ICRA) Time: 11.15-12.15</p>	<p>Antimicrobial resistance in wastewater: Surveillance and public health implications Speaker: Anna Picó (ICRA) Time: 11.15-12.00</p>	<p>Lunch at Roses Beach</p> 	<p>3D-Printed Photocatalysts and Photoactive Micromotors for Targeted Pollutant Removal and Bacterial Inactivation Speaker: Katherine Villa (ICIQ) Time: 11.30-12.15</p>	<p>From Paper to Impact: Turning Research into Real-World Solutions Speaker: Lluís Corominas (ICRA) Time: 11.30-12.00</p>
<p>The complexity in the study of PFASs, the Forever Chemicals Speaker: Marta Llorca (IDAEA) Time: 12.15-13.00</p>	<p>One Health, One Code: How microbial genomics connects us all Speaker: Oriol Sacristan (ICRA) Time: 12.00-12.45</p>		<p>Innovation in membrane filtration Speaker: Gaetan Blandin (UdG) Time: 12.15-13.00</p>	<p>From PhD to CEO: The Journey of Creating a Deep-Tech Spin-off Speaker: Nick Duinslaeger (ICRA) Time: 12.00-12.45</p>
<p>Lunch and Team building activity Time: 13.00-14.30</p>	<p>Lunch and Speakers/Poster corner Time: 13.00-14.30</p>		<p>Building a Spin-off: Lessons from Ecomemb's Deep-Tech Journey Speaker: Raquel Garcia (Ecomemb) Time: 12.45-13.30</p>	
<p>Innovative Approaches for Assessing Human Exposure to Contaminants: Biomonitoring vs. Sewage Epidemiology Speaker: Pablo Gago-Ferrero (IDAEA) Time: 14.30-15.15</p>	<p>Environmental virology in water samples: Analytical methods and global applications Speaker: Laura Guerrero (UdG) Time: 14.30-15.15</p>	<p>Novel advanced oxidation processes Speaker: Wolfgang Gernjak (ICRA) Time: 14.30-15.15</p>	<p>Lunch and Team building activity Time: 13.30-15.00</p>	
<p>Visit of ICRA analytical labs Time: 15.15-16.00</p>	<p>Bacteriophages as indicators of fecal pollution Speaker: Laura Sala Comorera (UB) Time: 15.15-16.00</p>	<p>Visit of ICRA technology labs Time: 15.15-16.00</p>	<p>Pitch Your Research: Sharpen Your Message for Impact. Final competition. The best pitch will receive an award! Moderators: Jury of experts Time: 15.00-16.00</p>	
<p>Final Reflections: The Power and Limits of Analytical Chemistry: Examples of some real case studies Moderators: Mira Petrovic, Meritxell Gros, Thomas P. Knepper Time: 16.00-17.00</p>	<p>Culture vs. molecular methods: Assessing drinking water quality Speaker: Anna Pinar Méndez (AB) Time: 16.00-16.45</p>	<p>General discussion + Kahoot Moderators: Jelena Radjenovic, Wolfgang Gernjak, Katherine Villa, Gaetan Blandin Time: 16.00-17.00</p>	<p>Key Insights: Translating Research into Action and Impact - Take home message Moderators: Lluís Corominas (ICRA) and Nick Duinslaeger (ICRA) Time: 16.00-17.00</p>	
	<p>Final reflections Time: 16.45-17.00</p>	<p>Transfer back to ICRA Responsible: Wolfgang Gernjak Time: 9.00-17.00</p>		
	<p>⚠️ At 19.00, there will be a Girona city tour, followed by the ICRA Frontier School dinner at 20.00</p>			

Speaker & Poster Corner

Are you ready to share your research, your vision, and your ideas with a community of international early-career researchers?

Here's your chance!

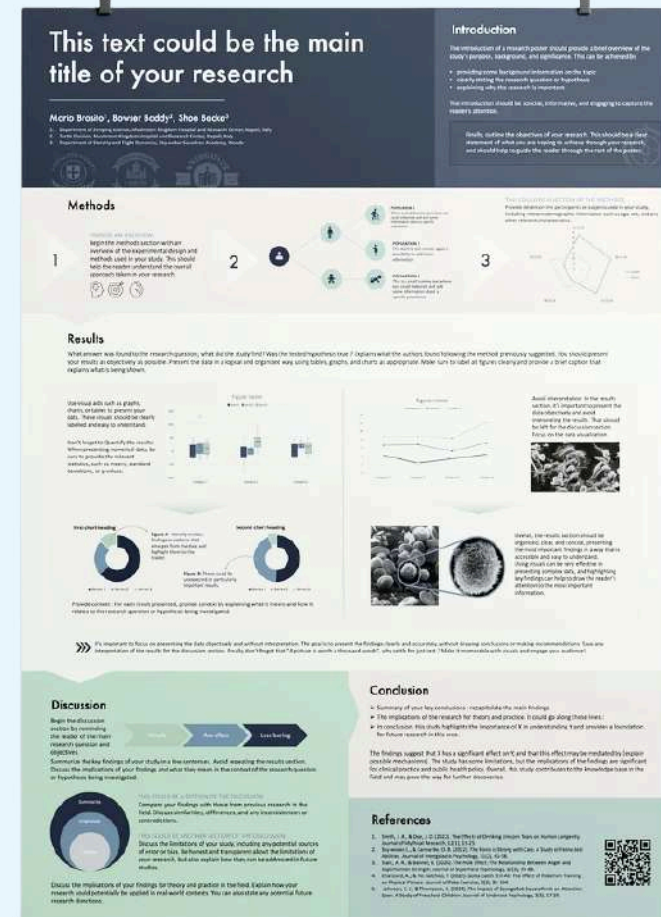
We would like to invite all participants of the ICRA Frontier School to present their work — whether it's your PhD thesis, postdoc project, institutional initiatives, or innovative ideas. This is an opportunity to showcase your work in a dynamic and informal environment, spark discussions, and connect with peers and experts.

Two ways to contribute:

1. **Short Pitch Presentation:** A quick and engaging 5-minute talk supported by up to 5 slides (PowerPoint or equivalent). Perfect for highlighting your research, methods, results, or future perspectives.
2. **Poster & Pitch:** Present your project with a poster and a concise 2-minute pitch. This format is ideal for sparking one-on-one discussions and getting feedback.

Why participate?

- Boost your visibility and share your work with an international audience.
- Get valuable input and fresh perspectives on your research.
- Practice your communication skills in a supportive and interactive setting.
- Expand your network and connect with like-minded peers and top-class scientists.



How to apply: Send your contribution proposal (title, format choice, and a brief abstract of max. 200 words) to Dr. Mira Petrovic (mpetrovic@icra.cat) by **1 May 2025**. Please include your name, affiliation, and whether you prefer the short pitch or the poster & pitch format.

For any questions, feel free to reach out to the organizing committee at FrontierSchool@icra.cat. See you at the Speaker & Poster Corner!

Registration

Registration deadline: 1 May 2025

Fee*: 400€ (VAT included)

Payment method:

BIC/ Código SWIFT: CAIXESBBXXX

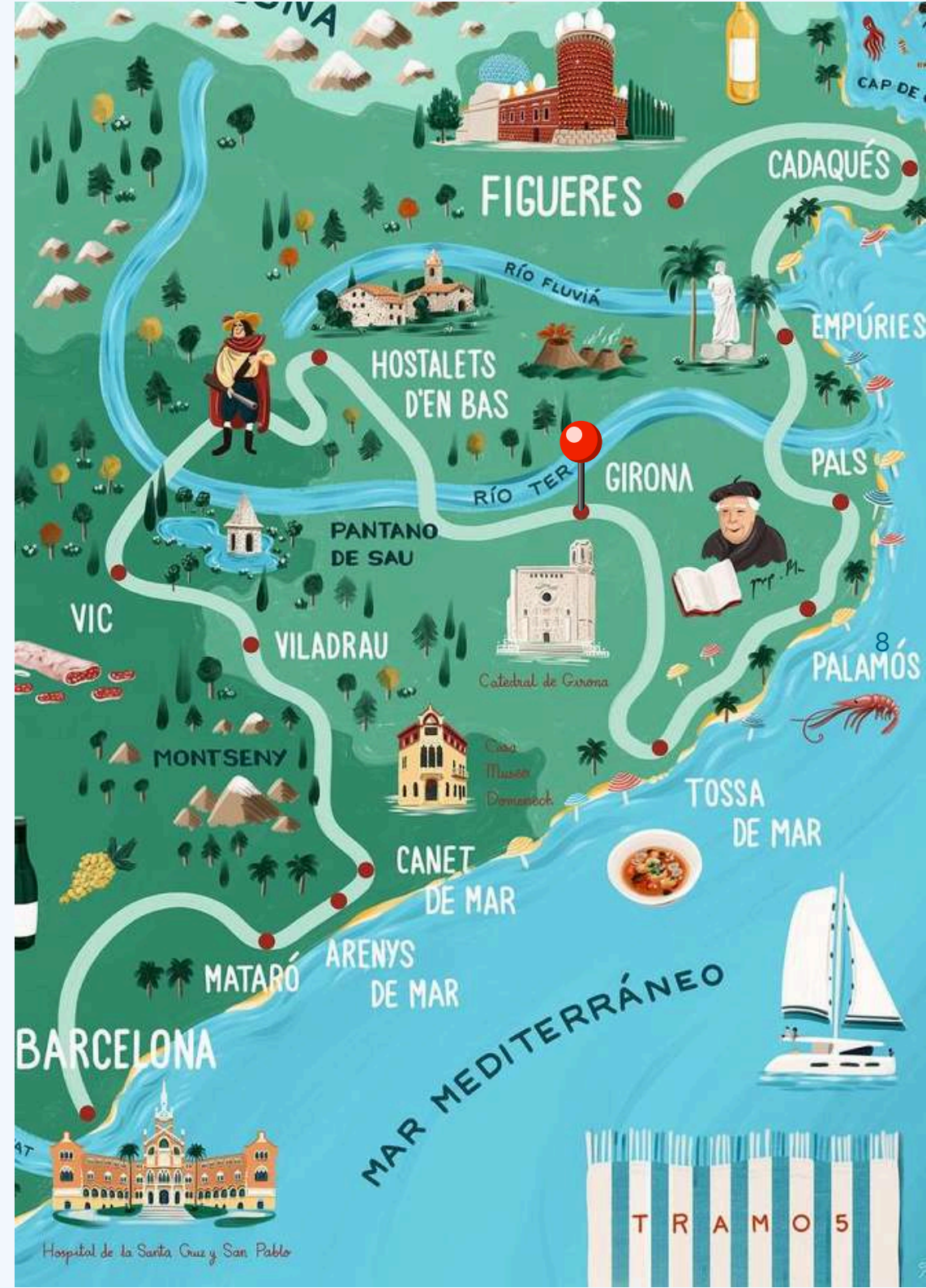
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***Important:** fee includes all lunches, coffee breaks, site visit to the demonstration site at Rosas (Costa Brava), city tour to Girona and a networking dinner). Travel to and from Girona and accommodation in Girona is not included and should be organized by the participants.

Where to register: [Online Forms](#)

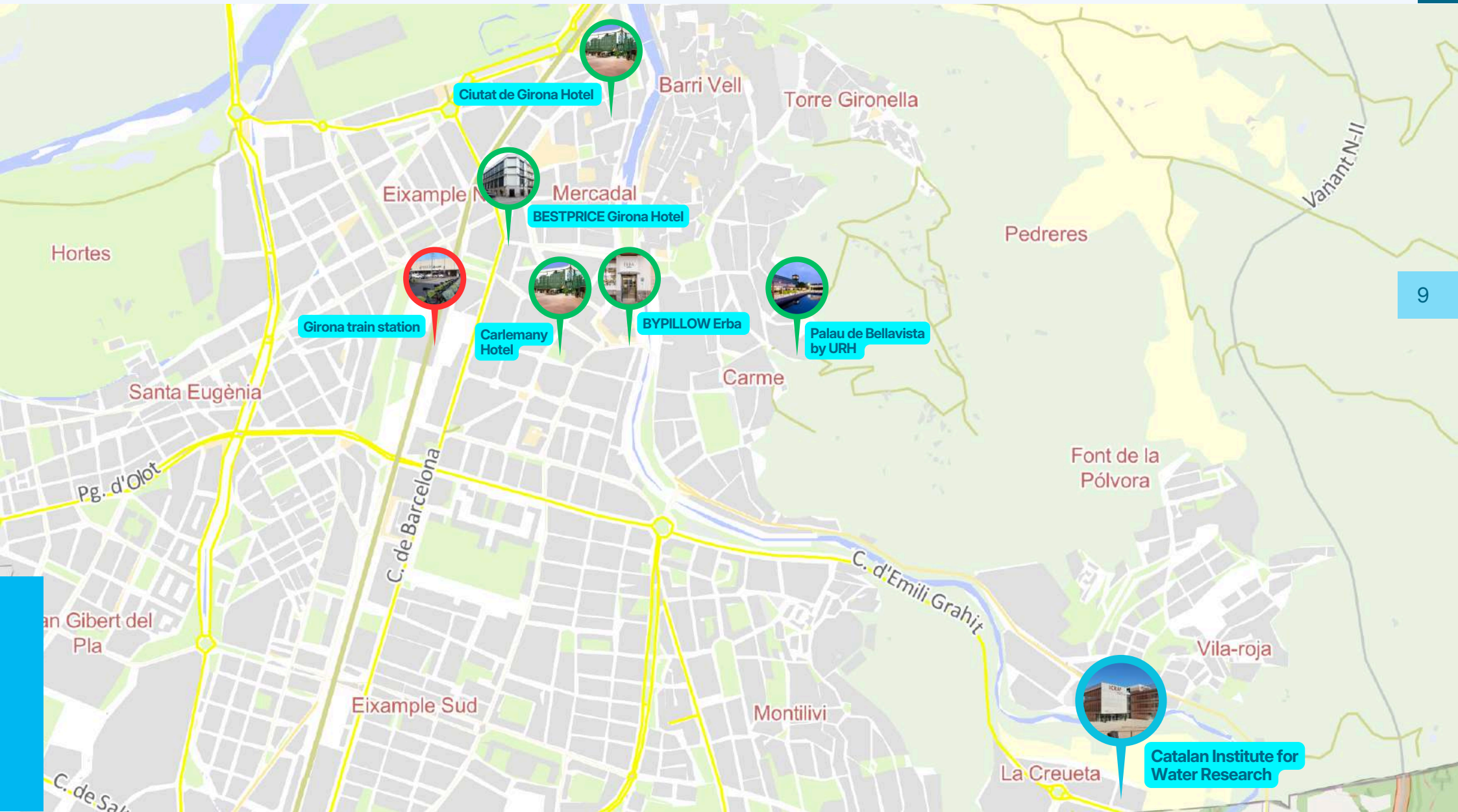


By Felix Díaz de Escarriaza



Practical information

Venue: ICRA H2O building, c/Emili Grahit 101, 17003 Girona. [Google maps link](#)



How to get to ICRA?

Your most likely travel schedule will take you by plane to Barcelona El Prat airport. From there you can get to Girona by a) public transport: train from airport to Barcelona Sants main train station and from there with train to Girona (around 2-2.5h), b) individual transport by rental car (around 1.5-2h). Find further details and additional options below.

Arrival by AIR



Girona has a touristic airport located 12 km from the city centre with good road connections (car, coach or taxi). Nevertheless, flights are usually from Europe only, plus during the winter months they are few. If you have a connection to this local airport, it is certainly the most convenient option at a 15-20 minutes taxi ride from most destinations in Girona city and ICRA. The most common way is however to arrive via plane to Barcelona- El Prat airport located south of Barcelona, slightly further away but relatively easy to transfer to Girona.

From Barcelona airport to Barcelona main train station

If you are arriving or departing from T1 (most major airlines) you need a free shuttle bus to take you to the airport train station located in T2. So, if you are at T1 go downstairs following the arrows for the shuttle bus and it will take you to T2, then follow signs for RENFE, where you take the train to Barcelona Sants Station – R2 line. If you arrive on a low-cost carrier (Ryanair, etc) you are likely to arrive directly to T2 and can walk to the station. In the station you can buy a single way ticket using the machines on your left-hand side. This train ride takes about 20 minutes. If in a hurry, the easiest way is to take a taxi to Barcelona Sants.

From Barcelona Sants train station high-speed trains leave for Girona (we recommend this one, but keep reading to see other train options).



Arrival by TRAIN from Barcelona to Girona

Adif Girona-Costa Brava railway station, located in the centre of Girona city, offers regional, national and international rail services. As well as the regular lines, Girona station is a stop on the Madrid - Zaragoza - Barcelona Sants - French border high-speed line (AVE), one of the main transport links between Spain and the rest of Europe.

If you are in Barcelona, you can go to Barcelona Sants Station and take the following trains:

- **Ave, Avant o Euromed:** This is the fastest way to get to Girona, and we recommend using it, which takes only 40 min.
- **Media Distancia:** It takes about 1 hour and 20 minutes.
- **Trenes Rodalies o Cercanías:** You must take R11 line (Barcelona Sants- Portbou) and it takes almost 2 hours to get to Girona. This is the cheapest option, but we do not recommend it.

You can book a train ticket in advance or just figure out which train to take once you are at the station. It is worth arriving in plenty of time to ensure that you have enough time to find your platform. For more information go to: <https://www.renfe.com/es/en>

Arrival by Direct BUS from Barcelona airport to Girona

There are a couple of bus companies that travel to Girona (ALSA and Sagalés) and it takes 2.5 hours. You can find detailed schedules here: [Timetable bus Barcelona airport to Girona and return](#). It leaves from T1 and T2 and is convenient, cheap and sustainable but with only a few daily buses.



Arrival by CAR from Barcelona airport to Girona



Rental car offices are available in Barcelona. Driving from Barcelona Airport to Girona or ICRA takes around 80-90 minutes, though travel time may increase during peak hours (7:30–9:30 AM, 16:30–19:00 PM).

The main access roads to Girona are:

- **AP-7:** AP-7 motorway Barcelona-France – the fastest option
- **N-II:** N-II main road Madrid-Barcelona-France

If you do not know the roads, GPS assistance (even if Google maps) is recommended as there are several options to bypass Barcelona. You can also take a taxi transfer to get directly to Girona, it is a bit expensive though (around €200). If you are travelling via public funding, this option may not be refundable (except perhaps late night).

Arrival at ICRA from Girona train station

ICRA is located at the south-eastern border of the city of Girona. Once at Girona Station, take the bus Line 8 (it takes 15 min- 1.40€) or if you prefer you can take a taxi and you will arrive to ICRA in 5 or 10 min approx.

Address:

Catalan Institute for Water Research / Institut Català de Recerca de l'Aigua
 Parc Tecnològic de la Universitat de Girona, H2O Building, Emili Grahit 101, 17003 Girona



Accommodation in Girona

Girona offers many accommodation options. For the ICRA Frontier School, we recommend Hotel Carlemany (4*), Hotel BESTPRICE Girona (1*), BYPILLOW Erba (2*), and BYPILLOW The Bloom (1*), as they are centrally located, close to each other, and just a 5-minute walk from the train station. Despite their 1-2 star ratings, these hotels are clean and well-maintained. If you're arriving by rental car, Hotel Palau de Bellavista is also a good option. **Important: All bookings should be made directly by the participants.**

The hotel list is as follows:

Hotel	Website	Contact e-mail for booking	Phone
HOTEL CARLEMANY (****)	http://www.hotelcarlemany.com/	carlemany@carlemany.es	+34 972 21 12 12
HOTEL CIUTAT DE GIRONA (****)	https://www.hotelciutatdegirona.com	info@hotelciutatdegirona.com	+34 972 48 30 38
BYPILLOW ERBA (**)	https://www.bypillow.com/	erba@bypillow.com	+34 972 20 10 66
PALAU DE BELLAVISTA BY URH (****)	https://www.urhbellavistagironahotel.com/ca	info.pbellavista@urh-hoteliars.com	+34 872 08 06 70
HOTEL BESTPRICE GIRONA (*)	https://hotelesbestprice.com/hotel-bestprice-girona/	girona@hotelesbestprice.com	+34 972 75 36 88



TRUSTEES



MEMBER OF



ICRA is a global leader in water cycle research, focusing on water resources, quality, and treatment technologies, with a commitment to knowledge transfer to society and industry.

More information?

Contact us at:
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