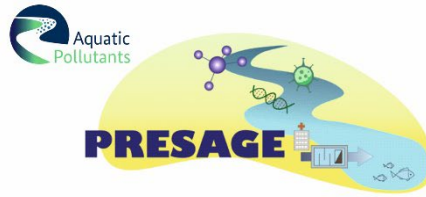




CRETUS



## PRESAGE Training School

# ADDRESSING CONTAMINANTS OF EMERGING CONCERN (CECs) IN ADVANCED WASTEWATER TREATMENT CONFIGURATIONS

Santiago de Compostela (Spain), 20-23<sup>rd</sup> May 2024

### SUMMARY

This short, intensive and highly specialised course is focussed on the removal of contaminants of emerging concern, such as organic micropollutants (OMPs), antibiotic resistant microorganisms/genes (ARMs/ARGs) and pathogens (including bacteria and viruses), during advanced wastewater treatment. The thematic areas of the course cover: i) different technologies for wastewater treatment and posttreatment; ii) methodologies to assess occurrence of chemical and biological pollutants in the environment; iii) microbiological tools to identify the biological pathways; iv) methods to determine the ecotoxicological consequences of their discharge and; v) process sustainability in a circular economy context. The final aim is to find solutions to reduce the emission of contaminants of emerging concern (CECs) to the environment.

The course also offers training on transversal skills, including tips to increase the impact of oral and written presentations, as well as insights to bibliometrics and ethics. The last day students will visit one of the newest and largest wastewater treatment plant in our region (Galicia).

The course is mainly oriented to PhD students who want to achieve a higher degree of specialisation in this field, but also to other students or professionals specifically interested in these topics and with a limited amount of time.

The course is organised by the Group of Environmental Biotechnology, which is part of CRETUS Center of the University of Santiago de Compostela (USC, Spain) and will be held at the School of Engineering (ETSE) and the Center of Research in Biology (CIBUS).

The course combines lectures with laboratory work, being the practicum focused on the operation of pilot and lab-scale innovative bioreactors as well as on the application of different advanced microbiological tools.

### COURSE SUMMARY

- Course language: English
- Number of participants: 30
- Total hours: 32 (theoretical, practicum, soft-skills workshop and technical visit)

## LIST OF LECTURERS

### Monday 20

- Francisco Omil. CRETUS, University of Santiago de Compostela (USC)
- Joaquim Comas. ICRA, University of Girona
- Isabel Oller Alberola. CIEMAT-PSA
- Miguel Mauricio. CRETUS, University of Santiago de Compostela (USC)
- Gracia Frutos. University Library, University of Santiago de Compostela (USC)
- Gemma Eibes. CRETUS, University of Santiago de Compostela (USC)
- Cristina Gómez. CRETUS, University of Santiago de Compostela (USC)

### Tuesday 21

- Ravi K. Chhetri. Denmark Technological University (DTU)
- Elis Watanabe. University of Sao Paulo (USP, Brazil)
- Víctor Matamoros. CSIC
- Marinella Farré. IDAEA-CSIC
- Luis Melo. University of Porto (UP)
- Ana Pereira. University of Porto (UP)

### Wednesday 22

- Jesús González López. University of Granada
- Jesús L. Romalde. CRETUS, University of Santiago de Compostela (USC)
- Alan X. Elena. Technical University of Dresden (TUD)
- Sabela Balboa. CRETUS, University of Santiago de Compostela (USC)
- Alba Trueba-Santiso. CRETUS, University of Santiago de Compostela (USC)
- Anuska Mosquera. CRETUS, University of Santiago de Compostela (USC)

### Thursday 23

- Eric Pinelli. INP Toulouse
- Laury Gauthier. INP Toulouse
- Maite Moreira. CRETUS, University of Santiago de Compostela (USC)
- Teresa Alvariño. CETAQUA
- Jose R. Vázquez. AQUALIA

## REGISTRATION

- **Registration Fee** (including attendance to lectures, practicum and technical visit): **150 €**.
- **Registration procedure:**
  - ✓ **fill in the registration form** including a 1-page CV at the following link:
    - general: [LINK](#)
    - only for USC members (if you belong to .usc domain): [LINK](#)
- **Registration fee must be paid by bank transfer to:**
  - Name of the bank: Banco Santander
  - IBAN: ES40 0049-2584-90-2214002210
  - SWIFT: BSCHEMM
  - Holder: Universidade de Santiago de Compostela
  - Issue: PRESAGE Summerschool (send a copy to the Secretariat).
- **Registration Deadline: Monday 4<sup>th</sup> March 2024**

## ORGANISATION

- **Coordination:** Sonia Suárez, Anuska Mosquera and Francisco Omil
- **Secretariat:** Rosa Arcos (rosamaria.arcos@usc.es). Tel. +34 8818 16773

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Santiago de Compostela (Spain), 20-23 May 2024

	20-may-24 <b>Monday</b>	21-may-24 <b>Tuesday</b>	22-may-24 <b>Wednesday</b>	23-may-24 <b>Thursday</b>
9:00 - 10:00	9:00. Reception and registration  9:30. Presentation of the course	9:00. Advanced staged MBR configurations for hospital wastewaters. <b>Ravi K. Chhetri (DTU)</b> 9:30. Micropollutant removal in anaerobic bioreactors. <b>Elis Watanabe (U. Sao Paulo)</b>	What does knowledge of the microbiome give us in treatment systems? <b>Jesús González López (U. Granada)</b>	Role of ecotoxicology in the environmental risk assessment. <b>Eric Pinelli &amp; Laury Gauthier (INP Toulouse)</b>
10:00-11:00	Advanced biological treatment of urban wastewaters. <b>Francisco Omil (USC)</b>	Nature-based solutions. <b>Victor Matamoros (CSIC; NATURE project)</b>	Fate of bacterial and viral pathogens in the urban water system. <b>Jesús L. Romalde (USC)</b>	Sustainability of water treatment processes. <b>Maite Moreira (USC)</b>
11:00-11:30	Coffee break	Coffee break	Coffee break	Coffee break
11:30-12:30	Membrane technologies for the removal of CECs. <b>Joaquim Comas (UdG, ICRA)</b>	The challenge of assessing CECs in the environment. <b>Marinella Farré (IDAEA - CSIC; FOREWARN project)</b>	Antimicrobial resistance genes in a One Health context: Impact and surveillance. <b>Alan X. Elena (TU Dresden)</b>	Circular economy in wastewater treatment. <b>Teresa Alvaríño (CETAQUA)</b>
12:30-13:30	Solar AOPs and integration of technologies for wastewater recovery. <b>Isabel Oller Alberola (CIEMAT-PSA)</b>	Contamination and disinfection in water systems. <b>Luis Melo &amp; Ana Pereira (U. Porto)</b>	OMICS: a guide to better understand the potential of the different techniques. <b>Sabela Balboa &amp; Alba Trueba-Santiso (USC)</b>	Short examination/questionnaire
13:30-15:00	Lunch	Lunch	Lunch	Technical visit
15:00-18:00	<b>Soft-skills workshop</b> 15:00. Oral presentations ( <b>Miguel Mauricio, USC</b> ) 15:45. Bibliometrics ( <b>Gracia Frutos, USC</b> ) 16:30. Scientific writing ( <b>Gemma Eibes, USC</b> ) 17:15. Ethics ( <b>Cristina Gómez, USC</b> )	<b>Practicum</b>  <i>Microbiology practicum</i>  <b>CIBUS building</b> <i>(org. Jesús L. Romalde, Sabela Balboa)</i>	<b>Practicum</b>  <i>Technological practicum</i>  <b>ETSE building</b> <i>(org. Anuska Mosquera)</i>	<i>Full-scale WWTP of Vigo (largest in Galicia)</i>  <i>Organised by José R. Vázquez (AQUALIA)</i>
18:00-19:00				
21:00-23:00			Social activity: Dinner	



<b>Summary of activities (32 h)</b>	Lectures (15 h)
	Soft skills workshop (3 h)
	Practicum (6 h)
	Technical visit (5 h)
	Social activity (2 h)
	short examination (1 h)

<b>Participants</b>	<b>PRESAGE project partners:</b> Universities: USC (Spain), DTU (Denmark), USP (Brazil), UP (Portugal), TUD (Germany), INP Toulouse (France)
	<b>Aquatic Pollutants Call:</b> Projects PRESAGE, NATURE, FOREWARN and TransNet
	<b>HOLI WATER project:</b> Research centers: USC, UdG, UGR, CETAQUA, CIEMAT-PSA
	<b>Companies:</b> AQUALIA



**COORDINATION:** Sonia Suárez, Anuska Mosquera & Francisco Omil. Group of Environmental Biotechnology, CRETUS. University of Santiago de Compostela (Spain).

**Number of students:** 30 predoc/posdoc

**Language:** English

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