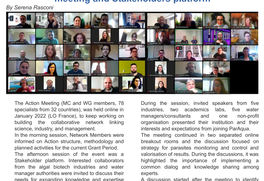
CA20125 ParAqua started the New Year with a Network meeting and Stakeholders platform

By Serena Rasconi



The Action Meeting (MC and WG members, 78 specialists from 32 countries), was held online in January 2022 (24-27 hours), to keep working on building the collaborative network linking academia, industry and stakeholders.

In the morning sessions, Network Members were informed on Action structure, methodology and planned activities for the current Grant Period.

The afternoon session of the event was a Stakeholder platform. Interested collaborators from the algal biotech industries and water managers' companies were invited to discuss their needs for expanding knowledge and expertise on algal parasites as well as opportunities within the Action.

The aim was to foster multi-sector collaborations and work together on the implementation of common activities, such as workshops, meetings and inter-lab visits and exchanges.

During the session, invited speakers from five industries, two academics labs, five water managers/consultancies and one non-profit organisation presented their institution and their needs in relation to algal parasites and pathogens.

The meeting continued in two separated online breakout rooms and the discussion focused on strategy for parasites monitoring and control and valorisation of results. During the discussions, it was highlighted the importance of implementing a common dialog and knowledge sharing among experts.

A discussion started after the meeting to identify institutes that are interested to host STSMs for inter-lab exchange and topics that can be proposed. The results of the discussion will be discussed at the WG4 meeting in Rome and will be annex to the next Grant Awarding Call.

Stay tuned ☺

NEWS FROM THE WORKING GROUPS AND COMMITIES

ParAqua Core Group welcomed prof. Francisco Gabriel Acien Fernandez as a new WG3 leader:

ParAqua Core Group	
MC Chair	Serena Rasconi (France)
MC Vice Chair	Dr Alena Gorki
WG3 leader	Silke Van den Wyngaert (Finland)
WG3 leader	Ivana Teleparsic (Serbia)
WG3 leader	Francisco Gabriel Acien Fernandez (Spain)
WG4 leader	Ana Gavrilovic (Croatia)
Grant Awarding Coordinator	Kristel Panksep (Estonia)
Action Co-Moderator	Dedmer van de Waal (The Netherlands)

Let's introduce our new WG3 Leader, prof. Francisco Gabriel Acien Fernandez and his institution

Ana Sanchez Zurano

Prof. Francisco Gabriel Acien Fernandez, University of Almeria

The University of Almeria, as a member of PARAQUA COST Action, will collaborate to understand the biological phenomena that take place in microalgae-related processes, especially contamination and diseases arising from the presence of pathogenic predators that severely reduce the performance of these systems.

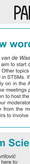
In this sense, the University of Almeria will provide its knowledge and facilities in order to use the pilot-scale facilities located in Almeria (Spain) and will share knowledge about data already being obtained from researchers in two additional EU projects named PRODIGIO and DIGITALGASEATION.

Over the years, industrial systems based on microalgae-bacteria consortia have received increasing attention as wastewater treatment and raw materials for the production of bioenergy, biofuels and bioproducts. The use of microalgae for wastewater treatment involves photosynthetic oxygen production which reduces the energy requirements and the environmental impacts associated with the mechanical aeration of conventional activated sludge systems. Furthermore, the microalgal growth in wastewater as a tertiary treatment can lead to the removal of nitrogen, phosphorus, pathogens and phosphorus, and the production of microalgal biomass useful for different industrial applications (biofuels, biofertilizer, biopesticides or animal feed). Despite numerous use of this technology with all its advantages, it has not yet been implemented on a large scale and continues to face major challenges.

On the one hand, ecosystems, such as microalgae production systems, often experience ecological state transitions so that systems shift from one steady state to another at a critical threshold or breaking point. Because critical state transitions alter the efficiency of microbial processes and can lead to system collapse, the ability to anticipate such transitions is crucial for the timely implementation of prevention countermeasures that guarantee microalgal production stability and technology profitability in the long term.

The PRODIGIO project, led by the Spanish National Research Council (CSIC) in partnership with the INDEA-Energía Institute, ID Consortium, and the University of Almeria from Spain, AIR ARMINES / Mines Paris Tech from France, the Alfred Wegener Institute from Germany, the Norwegian University of Life Sciences, and the University of Tromsø, is focused on developing an innovative system failure prediction technology that integrates artificial intelligence and microalgae

cultivation systems. For this purpose, during three years different microalgal production systems located at the University of Almeria, ranging in size from bench-scale bioreactors to large scale raceways, will be monitored daily, taking samples for the analysis of environmental, chemical and microbiological variables.



The resulting dataset will be analyzed using advanced methods in computational biology which will allow researchers to discover the biochemical and genetic bases of the mechanisms underlying the collapse of microalgae cultures. The PRODIGIO project is expected to help develop the microalgal biotechnology/industry sector, whose role is crucial in the current framework of developing more sustainable processes that contribute to the improvement of the bioeconomy. On the other hand, in order for microalgae biotechnology to be sustainable, flexible and economically viable, it is necessary to develop successful technologies for biomass production. For a feasible microalgal production, environmental (temperature and irradiance) and operational variables (dilution rate, culture depth, mixing) should be considered and optimized. Moreover, the use of digital twins (computational models that are updated in an approach to control and operate) is necessary to maximize their light conversion efficiency is crucial.

The DIGITALGASEATION project has received funding from the European Union's Horizon 2020 research and innovation program under the Marie Skłodowska-Curie grant to develop a network of individual projects between different European research groups, in which early-stage researchers will be the actors who will develop strategies for the control and optimization of microalgae systems from different approaches. Part of this project will be implemented in the microalgae production systems located at the University of Almeria, in which a new concept of a model based on an approach to control and operate wastewater treatment in large scale reactors using microalgae, which enable the profitability of this innovative technology.

From Working Group 4

Call for ParAqua logo

Milos Stojan

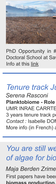
In order to establish branding of ParAqua Action on February 28th, the call for action logo went out to all Action members were invited to be creative, and to come up with more than one idea. We asked to identifiable logos, which will lead to the visual identity of ParAqua Action. The logo call was open till 10th of March and was coordinated by WG4 Co-Leader Milos Stojan, Action Co-Moderator Dedmer van de Waal and Grant Awarding Coordinator Kristel Panksep. In the end of March, 15th 2022, submitted logos were presented along with online voting. The logo proposed by by Dr. Joaquin Pozo Dengra scored the most votes, and also during the discussion in the breakout room after the voting was completed, that proposal received the most praise from all present participants.

Designers of the logo are Fernando Roman and Miguel Angel Cadala from the Marketing department of the company Biorizon Biotech, Spain.

Detailed information about the logo and its authors is coming soon in our Newsletter#3. Stay tuned.

Congratulations Fernando and Miguel!

Let's present selected ParAqua logo



WG4 Meeting and WG4 Training School "Best Practices In Communication" Preparation

M. MEHMET AKIF ERSOY UNIVERSITY in Burdur, Turkey, our Scientific Communication Co-Coordinator Dr. Füsun Akgül and her students worked hard to host the virtual zoom WG4 Meeting and WG4 Training School "Best Practices In Communication".

You will read more information in our next issue.

Dr. Füsun Akgül and her students Samet Kösel and Songa Bulut

A few words from our Moderators

Dedmer van de Waal

- We aim to start developing a living document that contains our main information, e.g. the Code of Conduct etc. Other topics that have come up for further discussion are criteria for diversity in Workshop participation and in STSMs. For organizers wish they could reach out to us for discussion.
- Early on in the Action we would like to organize a training on how to lead Working groups (discussions), make meaningful decisions, involve all members, etc. We will get in touch with the ParAqua core group to decide when to host the training
- In our moderator group, we have representatives from various WGs. These representatives, or someone else from the moderator team, can help organizing an ice-breaker in WG meetings. We invite the WG chairs to involve moderators for this purpose.

From Science Communication Committee

Ana Gavrilovic

We are here to:

- Support smooth communication between Action members (internal communication)
- Support smooth external communication, dissemination and valorisation of ParAqua by providing services (advice, instructions, help when necessary, template preparation, etc.) for the Action members warranting high-quality and coherent information delivery.

Right now, together with WG4, we are working on our first deliverables expected by May 2022:

- Communication & Dissemination Plan
- Social media profiles: Twitter and LinkedIn have already been opened, while Instagram and Facebook are coming soon
- Research/Data profile
- Webpage development

In order to meet our goals and ensure ParAqua visibility, quality communication and dissemination of the Action's outcomes and results by knowledge transfer between scientists, industry, water managers, policy makers and the general public - **WE NEED ENGAGEMENT OF ALL OUR ACTION MEMBERS!!!**

How can you get involved?

- **Follow, like, share, hashtag**……our social media profiles - right now Twitter, LinkedIn and LinkedIn profile!!!
- **Send us** information about your activities, publications, press releases published in local / national media…
- Follow the example of University of Almeria **and appoint your Institutional Communication Manager** who will share all information relevant for the Action with us!

Ana Sanchez Zurano, the first Institutional Communication Manager in ParAqua

ANNOUNCEMENTS

Media and Communication

We search members that want to be account master.

Contribution for post and news to feed the **Network social media** accounts are welcome ☺

PhD Opportunity in France

Serena Rasconi

PhD Opportunity in #aquatic **#ecology** - **#lake functioning** and **#trophic biomarkers** – Submitted at the Doctoral School at Savoie Mont-Blanc University) – France

Info at this link

Tenure track Junior Research Director position available in France

Serena Rasconi

Planktolorraine - Role of the microbial interactions in lake plankton dynamics and algal blooms

LIMNIRAE CARITEL – Thonon les Bains – FR

2 years tenure track position with support to organize a training on how to lead algal blooms

Info and contact: Dr. Isabelle.domaizon@inrae.fr – LIMNI CARITEL lab director

More info (in French) at this link

You are still welcome to participate with papers on Boosting the potential of algae for biomass production, valorization, and bioremediation

Maja Berden Zrimec

First papers have been submitted to the call on **Boosting the potential of algae for biomass production, valorization, and bioremediation**, edited by the COST ParAqua members in the scope of Frontiers publications. The publication submission deadline is May 31st, 2022, but will be extended for any new proposals, so you are still very welcome to participate.

Link

Session on Monitoring and Detecting Aquatic Pathogens at American Fisheries Society (AFS)

Irene Adrian-Kalchhauser

FIWI's PhD student Jessica Rieder organizes a Session on Monitoring and Detecting Aquatic Pathogens at this years American Fisheries Society (AFS) in Spokane, WA (August 21st – 25th, 2022).

More information at this link

International Scientific Conference "Sustainable Bioeconomy Development 2022: Theory and Practice.

Maija Balode

The International Scientific Conference **"Sustainable Bioeconomy Development 2022: Theory and Practice" will be held online on 4-5 May 2022.**

The conference is organised by the Faculty of Bioeconomy Development of Vytautas Magnus University Agriculture Academy and the Faculty of Economics and Social Development of Latvia University of Life Sciences and Technologies.

The conference is dedicated to discussing research ideas related to the following topics:

- Bioeconomy Contribution to the European Green Deal
- Role of Innovative, Sustainable and Inclusive Bioeconomy in Development of Rural Areas
- Logistics and Marketing of Biological Resources and Bioproducts
- Innovative Business Solutions in Bioeconomy

Conference e-mail: SBDconference@vdu.lt

Conference website

Practice"

ParAqua -Second Call for Short-Term Scientific Missions (STSM) Applications

More information at this link

MESSAGE FROM OUR COST PROGRAMME

Lorna Stokes

Be sure to tag **COST** and **#COSTactions** in your social posts because we're always happy to engage:

Twitter: **@COSTprogramme**

LinkedIn: **COST Association - European Cooperation in Science and Technology**

Facebook: **COST Association - European Cooperation in Science and Technology**

Instagram: **@cost_programme**

YouTube: **COST - European Cooperation in Science and Technology**

Newsletter: we distribute a monthly newsletter, sign up (form located at the bottom of our website homepage)

ENGAGE WITH US

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#ParAqua
#CA20125
#ZoosporicParasites
#AlgalBiotech

ACTION LINKEDIN:

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