

# Wheat based food security in an unpredictable and changing climate

9<sup>th</sup> - 12<sup>th</sup> December 2024

**Monday 9<sup>th</sup> December, Lleida**

**Lleida:** Crop development and yield traits, abiotic stresses

**Arrival, people making own dining arrangements**

**Tuesday 10<sup>th</sup> Dec, Lleida**

Chairs: **Simon Griffiths and Gustavo Slafer**

Time	Topic	Speaker	Please keep strictly to time
09:00	CSIC Welcome	Ernesto Igartúa (CSIC Coordinator agriculture area)	5 min
9:05	Workshop Welcome	Simon Griffiths and Gustavo Slafer	10 min
9:15	Opportunities for collaboration within a Doctoral framework (academic) – UK perspective	Philippa Borrill	25 min + qs
9:45	Opportunities for collaboration within a Doctoral framework – WheatNet perspective	Francisco Barro	25 min + qs
10:15	Overview of doctoral network requirements and breakout objectives	Azahara Martin	15 minutes+ qs
10:35	Developing future research projects in alignment with global breeding strategies	Anna Backhaus	10 minutes + qs
10:50	Breeding perspective on potential of doctoral network	Viktor Korzun	15 min + qs
11:10	Coffee Break (11.10-11.40)		
<b>In the next session all speakers are asked to finish a presentation of their science (within the 10 minute window!) with their own thoughts on these questions:</b> <ol style="list-style-type: none"> <li>1. Why is it important to train people in your area of research so that a contribution is made to wheat breeding in the future?</li> <li>2. How could closer interactions with other scientific and technological areas would help to catalyse progress in your research area?</li> <li>3. What training in transversal skill would you like to see in a PhD programme? This includes important generic skills like writing CVs, time management, and cultural awareness but also the scientific benefits of skills that you could gain from a highly interdisciplinary PhD programme.</li> </ol>			
11:45	Deciphering root angle regulation in wheat	Rahul Bhosale	10 min + qs
12:00	Adapting wheat photosynthesis to global warming	Joana Amaral	10 min + qs
12:15	Spike fertility in wheat: physiological aspects and opportunities for yield improvement	Santiago Tamagno	10 min + qs
12:30	Genes controlling senescence and drought responses in wheat	Miles Curl	10 min + qs
12:45	Coordination of carbon-nitrogen metabolism under abiotic stress	Rubén Vicente	10 min + qs
13:00	Multi scale phenotyping at Rothamsted	Malcolm Hawkesford	10 min + qs
13:15	Wheat phenotyping under Mediterranean conditions using multispectral UAV-Satellite (Skysat) high resolution remote sensing and stable isotopes	Joel Segarra	10 min + qs

13:30	Lunch (13.30-14:45)		
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### Three concurrent breakout sessions (14:45-15:45)

The holding title for the doctoral network is:

**“Wheat based food security in an unpredictable and changing climate”.**

The breakouts will address the question:

#### Which work packages would you include in the doctoral network?

Work packages should reflect the research objectives and the cross-cutting nature of the training network. Keep in mind that doctoral networks aim to promote international, intersectoral, and interdisciplinary collaboration. You may also break them down into tasks, themes, technologies or other components. One of the chairs will report for the group.

	Breakout presentations and discussion (16.00-17.30)		
15:45	Breakout presentation 1	Anthony Hall & Roxana Savin	10 min
Initial comment and clarifications			5 min
16:00	Breakout presentation 2	Katie Noel & Marta Da Silva	10 min
Initial comment and clarifications			5 min
16:15	Breakout presentation 3	Clare Moscrop & Dolors Villegas	10 min
Initial comment and clarifications			5 min
16:30-17:15	General discussion and wrap up	Simon Griffiths and Gustavo Slafer	45 min

Dinner – all delegates (20:00)



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### **Wednesday 11<sup>th</sup> Dec, Cordoba**

**Cordoba:** Biotic stresses, grain development and quality, other cereals

**Morning:** Travel from Lleida to Cordoba

**Lunch at Hotel Hesperia (14:00)**

**Afternoon:** Biotic stresses linked to climate change and other crops

Chairs: **Paul Nicholson and Alejandro Pérez**

Time	Topic	Speaker	Please keep strictly to time
15:30	Welcome	Paul Nicholson and Alejandro Pérez	15 min
<b>In the next session all speakers are asked to finish a presentation of their science (within the 10 minute window!) with their own thoughts on these questions:</b> <ol style="list-style-type: none"><li>1. Why is it important to train people in your area of research so that a contribution is made to wheat breeding in the future?</li><li>2. How could closer interactions with other scientific and technological areas would help to catalyse progress in your research area?</li><li>3. What training in transversal skill would you like to see in a PhD programme? This includes important generic skills like writing CVs, time management, and cultural awareness but also the scientific benefits of skills that you could gain from a highly interdisciplinary PhD programme.</li></ol>			
15:45	What are the effects of disrupting wheat rust disease susceptibility factors?	Sarah Bailey	10 min + qs
16:00	Breeding for resistance to foliar diseases of wheat and sustainable management under climate change scenarios	Cristina de Miguel	10 min + qs
16:15	Aphids and beyond – pursuing interdisciplinary knowledge of viral disease vectors	Lawrence Bramham	10 min + qs
16:30	Finding resistance and susceptibility loci for Fusarium Head Blight	Roshani Badgami	10 min + qs
16:45	Improving durability of resistance through cellular/histological studies	Elena Prats	10 min + qs
17:00	General or small group discussion	Paul Nicholson and Alejandro Pérez	30 mins
17:30	From the field to the lab and back: Pre-breeding for cereals at ICARDA	Anna Backhaus	20 min + qs

Dinner – all delegates (20:30)



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## **Thursday 12<sup>th</sup> Dec, Cordoba**

**Morning:** Grain quality and nutritional traits

Chairs: **Peter Shewry and Rosa Morcuende**

Time	Topic	Speaker	Please keep strictly to time
9:00	Genomics and genetics - quality phenotyping	Alison Lovegrove	15 min + qs
9:20	Wheat quality traits interesting for the Spanish industry	Carlos Guzman	15 min + qs
9:40	From Wheat Quality to Wheat Allergenicity?	Gilberto Igrejas	15 min + qs
<b>In the next session all speakers are asked to finish a presentation of their science (within the 10 minute window!) with their own thoughts on these questions:</b> <ol style="list-style-type: none"><li>1. Why is it important to train people in your area of research so that a contribution is made to wheat breeding in the future?</li><li>2. How could closer interactions with other scientific and technological areas would help to catalyse progress in your research area?</li><li>3. What training in transversal skill would you like to see in a PhD programme? This includes important generic skills like writing CVs, time management, and cultural awareness but also the scientific benefits of skills that you could gain from a highly interdisciplinary PhD programme.</li></ol>			
10:00	Exploring Genetic Diversity for Enhancing Wheat Nutritional Quality and Nutrient Use: Insights from the A.E. Watkins Landrace Collection	Petros Sigalas	10 min + qs
10:15	New plant breeding techniques to improve wheat quality	Susana Sánchez	10 min + qs
10:30	Understanding the control of starch granule size in wheat and its impact on human nutrition	Farrukh Makhamadjonov	10 min + qs
10:45	Improving wheat quality: genetic approaches and end-use implications	Jose Guadalupe Vázquez	10 min + qs
11:00	HBQI - Healthy Bread Quality Index	Jorge Pastor	20 min + qs

Brunch break (11.30-12.30)

Bread exhibitions (Antonio Fernández and José Roldán)

## **Three concurrent breakout sessions (12.45-13.45)**

**Can you propose individual projects for the recruited researchers that could be integrated into each work package?**



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Ideally, expertise and methods from different disciplines should be combined to achieve the objectives of each individual project. These projects should contribute to the overall research program, while also promoting international and intersectoral collaboration. One of the chairs will report for the group.

13:45	Breakout presentation 1	Philippa Borrill + Pilar Prieto	10 min
Initial comment and clarifications			5 min
14:00	Breakout presentation 2	Sadiye Hayte + Susana Sánchez	10 min
Initial comment and clarifications			5 min
14:15	Breakout presentation 3 - Training and culture -	Stephen Pearce + Pilar Hernández	10 min
Initial comment and clarifications			5 min
14:30	General wrap up and next steps	Simon, Peter, Azahara	45 mins

Finish by 15:30 pm for UK participants to catch flights