



Announcement

European Plant Science Organisation
<https://epsoweb.org>

EPSO members are invited to join the EPSO Future Proofed Crops Working Group

Brussels, 10.11.2021

EPSO is pleased to announce the start of its new Working Group 'Future Proofed Crops'. It will focus on adapting our crops to the shifting climate, to improve **abiotic stress, photosynthesis and resource use efficiency** of crops, and to stably increase crop yield and - via the link to our Nutritional Security WG crop nutritional quality. It encompasses the continuum from basic to applied research.

The first activity planned by the WG will be a (probably online) meeting in February 2022 to discuss the upcoming novel possibilities to future proof our crops.

Pls discuss this in your organisation and reply to Karin, cc Sofia and the chairs to become a member of this WG best by 3rd December (we suggest 1-2 expert scientists per organisation interested in this subject). To enrol an expert, please provide the providing the name, function in the institute, 1-3 keywords on the expertise and contact details.

Interested in the other EPSO WGs?

Discuss in your organisation all EPSO Working Groups (see 2nd attachment) and let Karin know if you want to add expert scientists to the other WGs.

EPSO members start and coordinate EPSO Working Groups to collaborate on science advancement, networking, strategy and provide science advice to policy.

We suggest that 1-2 expert scientists per member organisation join a WG relevant to them.

Membership in EPSO WGs is restricted to experts from EPSO Institutional members. Others can apply to become and observer of a WG

Looking forward to collaborating with you in the FPC WG
Rene, Christine, Andreas, Francesco, Alain and Karin

FPC WG co-chairs: René Klein Lankhorst, Christine Raines, Andreas Weber, Francesco Loreto and Alain Gojon.

EPSO Executive Director: Karin Metzloff

FPC WG Activities

Our climate is changing and the world population is growing to an estimated 10 billion people by 2050. This will cause serious problems in global food supply, for environment sustainability and safeguarding Earth's biodiversity. To overcome these challenges, agriculture will have to adapt and a key element in this will be the development of "future-proof" crops. These crops will not only have to be high-yielding and providing high-quality products, but should also be able to withstand future climate conditions, make efficient use of scarce resources such as water and minerals, and sustainably self-defend against abiotic and biotic stresses while maintaining yield stability. Future crops should not only give access to sufficient, nutritious, and diverse food options to a worldwide growing population, but also support the circular bio-based economy and contribute to reducing atmospheric CO₂ concentration, counteracting CO₂-driven global warming. Furthermore, such crops must contribute to mitigating the biodiversity crisis. Future-proofing our crops is both an urgent issue and a challenging goal that can only be realized by large-scale, international scientific effort.

The WG "Future proofed crops" will take a comprehensive approach, from genome to phenome, to support the delivery of high yielding, resilient European crops fit for climatological, environmental, and societal constraints. Our major focus is on developing crops that have more resilient and efficient **Photosynthesis** and that can resist to **abiotic stress** to avoid nutrient and/or water limitation of CO₂ fixation. These approaches will lead to safeguarding future crop production, optimizing plant **resource use efficiency**, and minimizing the environmental impact of agriculture. We fully acknowledge that future-proofed crops will have to be grown in a sustainable agricultural system that takes into account Earth's limits and boundaries. Therefore, this WG will actively engage with other entities involved in, for instance, protection against future pests and diseases (EPSO Plant Health WG), plants and microbiome interaction (EPSO MiBi WG), nutritional security (EPSO WG NS), agricultural technologies (EPSO AgT WG), adaptation of agronomy and cultivation/production systems, agro-ecology, and development of future post-harvest processing and food production.

Next to safeguarding Europe's food production, we also have a clear focus on future proofing crops, including silviculture, for non-food purposes. The main drivers behind this aspect are increasing the photosynthetic sink of CO₂ and other greenhouse or reactive gases for climate change mitigation, and supporting a global shift from a fossil based economy towards a biobased economy. Examples of envisioned adaptations are optimizing CO₂ capture capacity of plants for below ground storage of carbon, or developing and adapting crops for high and efficient biomass production as feedstock that replaces fossil resources.

The WG will form a platform for European scientists to cooperate and exchange information about future proofing European crops. We have a clear focus on developing practical measures for crop improvement which will require a close cooperation with the breeding industry, farmers and other stakeholders in plant-based value chains. Industrial parties therefore are explicitly welcomed as observers of our working group.

Furthermore, this WG will advise the European Commission and other European bodies in matters pertaining to the design and implementation of future crops. Also, we will stimulate research cooperation at the European level and leverage funding for scientific research in the field of future proofing crops.

This WG evolved from the Horizon 2020 funded '[CropBooster-P](#)' (1.11.2018 – 30.4.2022) Coordination and Support Action developing a roadmap for boosting global crop yield for food and nutritional security and to fuel the bioeconomy

FPC WG Members are already:

Alain Gojon, INRAE, FR
Jeremy Harbinson, WUR, NL
Liina Jakobson, ETKI, EE
René Klein Lankhorst, WUR, NL
Francesco Loreto, CNR, IT

Karin Metzloff, EPSO
Christine Raines, Univ Essex, UK
Tracy Valentine, Hutton, UK
Guido van den Ackerveken, Utrecht Univ, NL
Andreas Weber, Heinrich-Heine University, DE
Samuel Zeeman, ETH, CH

Contacts

EPSO:

Karin Metzloff, EPSO Executive Director, Karin.Metzloff@epsomail.org
Sofia Ciravegna, EPSO Executive Assistant, Sofia.ciravegna@epsomail.org

EPSO FPC WG co-chairs:

René Klein Lankhorst (WUR / NL), rene.kleinlankhorst@wur.nl
Christine Raines (Essex / UK), rainc@essex.ac.uk
Andreas Weber (HHU / DE), Andreas.Weber@uni-duesseldorf.de
Francesco Loreto (CNR / IT), francesco.loreto@cnr.it
Alain Gojon (INRAE / FR), alain.gojon@inrae.fr

Useful links

EPSO Working Groups: <https://epsoweb.org/working-groups/>
EPSO breaking news: <https://epsoweb.org>
EPSO publications: <https://epsoweb.org/news/>
EPSO member institutes and universities: <https://epsoweb.org/about-eps/epsomembers/>
EPSO representatives: <https://epsoweb.org/about-eps/representatives/>

About EPSO

EPSO, the European Plant Science Organisation, is an independent academic organisation that represents around 200 research institutes, departments and universities from 32 countries, mainly from Europe, and 2.300 individuals Personal Members, representing over 26 000 people working in plant science. EPSO's mission is to improve the impact and visibility of plant science in Europe, to provide authoritative source of independent information on plant science including science advice to policy, and to promote training of plant scientists to meet the 21st century challenges in breeding, agriculture, horticulture, forestry, plant ecology and sectors related to plant science. <https://epsoweb.org> | EU Transparency Register Number 38511867304-09