



RESPONSE – Open PhD Position

Open PhD Position in

RESPONSE (GA No. 847585)

«RESPONSE - to society and policy needs through plant, food and energy sciences»

H2020-MSCA-COFUND-2018

ESR 14

ChromoBreed: From Chromatin to Plant Breeding

Within the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 847585, University of Zurich is offering a 36-month PhD position for an early-stage researchers (ESR) in the area of sustainable food systems.

Background

Remodelling of the epigenome has emerged as a new powerful technique for plant breeding. Transposable element (TE)-based plant breeding takes advantage of the mobility of TEs to generate desired traits. During this process, TEs are mobilized and re-inserted into the genome, sometimes resulting in expression changes of nearby genes that control plant traits. Despite its successful application in *Arabidopsis* and rice, the molecular mechanisms controlling TE reactivation for this breeding strategy remain to be elucidated. The proposed project aims at elucidating the epigenetic pathways that regulate the activity of TEs and apply the obtained knowledge to improve TE-mediated plant breeding.

Job Description

We are looking for a motivated PhD student candidate working on the molecular mechanisms guiding TE-based plant breeding strategies. Specifically, the ESR will use molecular biology and next generation sequencing methods to investigate how components of the transcription and histone deposition machineries regulate the expression of TEs. In parallel to performing experiments, the ESR will write a review on the importance of epigenetics for plant breeding.

The gained knowledge will be transferred to the partner organization, epibreed AG (www.epibreed.com). epibreed is specialized in accelerating breeding efforts to improve specific plant traits and holds an exclusive patent on the TEgenesis® method that allows plants to naturally adapt to a specific stress or selected trait without the need of crossing or transformation. During a 3 months secondment (i.e. internship) at epibreed, the ESR will assess TE expression and mobility using RT-qPCR and whole-genome sequencing approaches. To achieve this, the ESR will be working closely with Etienne Bucher and his team members.



The anticipated results/outcomes of this project are to unravel the molecular mechanisms underlying TE-based plant breeding. The results will be published in an international, open-access, peer-reviewed journal and shared with a broad audience by social media and during public outreach events at the University of Zurich.

Overall, the PhD project offers an interdisciplinary research training in epigenetics, genetics, molecular biology, bioinformatics and plant breeding.

Interested / Your profile

To perform successfully, potential candidates should have strong interests in chromatin biology and epigenetics, in experimental work in the laboratory and in plant breeding. Previous experience in lab work and good communication skills are essential.

Eligibility: Early stage researcher in the first 4 years (full-time equivalent) of their research careers, including the period of research training, starting at the date of obtaining the degree which would formally entitle them to embark on a doctorate either in the country in which the degree was obtained or in the country in which the initial training activities are provided.

At the time of recruitment (for call 2 = July 1, 2020) by the host organisation, researchers must not have resided or carried out their main activity (work, studies, etc.) in Switzerland for more than 12 months in the 3 years immediately before the reference date. Compulsory national service and/or short stays such as holidays are not taken into account.

Language requirement: English / Proficient oral and written English skills are expected.

Main Research Field: Plant Science

Sub Research Field: Chromatin Biology, Epigenetics, Transposable elements, Plant breeding.

RESPONSE is open to applicants of any nationality.

For submitting your online application: <https://join.lszgs.uzh.ch/> (select PhD Program Science and Policy). The online application should contain all information as indicated by the application portal. Moreover, the following documents have to be uploaded under “further documents”: 1) a letter of motivation to join a) the RESPONSE doctoral programme and b) to apply for this specific position (ESR xx), 2) a comprehensive tabular CV, and 3) transcripts of records. If you apply for more than one RESPONSE position, please refer to them in your letter of motivation. Please note that we exclusively accept applications submitted through our online application portal. Applications via email or postal services will not be considered.

Benefit



We are offering an interesting position at the interface of science and policy. While working in an international, interdisciplinary and innovative research environment at University of Zurich, the ESR will be jointly co-supervised by Sylvain Bischof at University of Zurich and by Etienne Bucher at epibreed AG.

The complete 36 months will be under 100% working contracts.

The PhD salary follows the regulations of University of Zurich and will be according to EU regulations for Marie Skłodowska-Curie Early Stage Researchers. The monthly gross salary will not be lower than CHF 3920.

The successful candidate will be matriculated and will have a working contract at University of Zurich. He/she will work in Switzerland. The secondment will take place in Basel and Changins, Switzerland.

Expected starting date of the working contract: **01.09.2020**

For questions and further information on the position, please contact Sylvain Bischof (sylvain.bischof@uzh.ch).

Further information

RESPONSE Doctoral Programme (DP): «RESPONSE - to society and policy needs through plant, food and energy sciences» is funded by the European Union's Horizon 2020 research and innovation program under the Marie Skłodowska-Curie Grant Agreement No 847585. RESPONSE DP builds on the academic expertise of three world-leading institutions - ETH Zurich, University of Zurich and University of Basel. The successful candidate will be integrated in the research network and infrastructure of the internationally renowned competence center [Zurich-Basel Plant Science Center](#).

All RESPONSE ESRs will follow the [PSC PhD Program Science and Policy](#) that is unique in its kind. Through the curriculum of this program, ESR will be trained in the communication of scientific evidence to policy-makers and the public; the involvement of different stakeholder groups as well as in policy development and endorsement in Europe and at global scale.

For project, programme and application details:

<https://www.plantsciences.uzh.ch/en/research/fellowships/response.html>

Working location: Institute of Plant and Microbial Biology, Zollikerstrasse 107, 8008 Zurich, Switzerland



Marie Skłodowska-Curie Actions (MSCA)

Co-funding of regional, national and international programmes (COFUND)

H2020-MSCA-COFUND-2018



“This program receives funding from the European Union’s Horizon 2020 research and innovation program under the Marie Skłodowska-Curie grant agreement No 847585”.