



Boosting technology transfer and responsible research and innovation (RRI) in plant sciences

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What is it about?

PlantHUB is a European Industrial Doctoral Programme (EID) funded by the H2020 PROGRAMME Marie Curie Actions – People, Initial Training Networks (H2020-MS-CA-ITN-2016). The programme is managed by the Zurich-Basel Plant Science Center. PlantHUB offers training to 10 PhD students in skills and competencies necessary to apply responsible research and innovation (RRI) in the area of plant breeding and production. The programme addresses the demand for RRI leadership in plant science related research and diffusion of innovation.

Academic – Industry Collaboration

Academic interface

- ETH Zurich (Switzerland)
- University of Zurich (Switzerland)
- University of Basel (Switzerland)

Industry interface

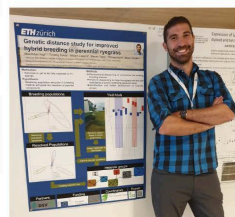
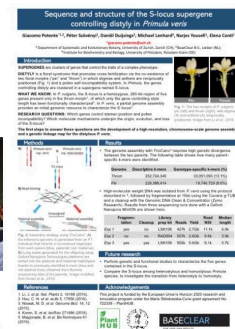
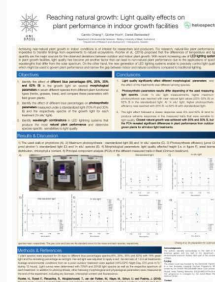
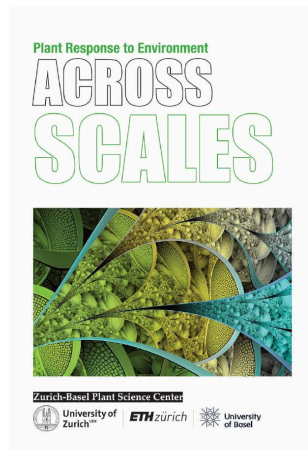
- CARLSBERG GROUP, Carlsberg Research Laboratory (Denmark)
- Deutsche Saatveredelung AG (Germany)
- Photon Systems Instruments (Czech Republic)
- BASECLEAR BV (The Netherlands)
- HELIOSPECTRA (Sweden)
- AGROISOLAB GMBH (Germany)

Oral and poster presentations at conferences

Deliverable 52

Dissemination level: public

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www.plantsciences.ch/en/research/fellowships/PlantHUB.html



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D52: 10+ Oral & poster presentation at conferences

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PlantHUB offers training to 10 PhD students in skills and competencies necessary to apply responsible research and innovation (RRI) in the area of plant breeding and production. The programme addresses the demand for RRI leadership in plant science related research and diffusion of innovation.

The PlantHUB doctoral students are enrolled at ETH Zurich, University of Zurich or University of Basel, corresponding to their supervisors' lab affiliation and they spent 50% of the PhD time with a partnering industry company:

Academic interface	Industry interface
ETH Zurich (Switzerland)	CARLSBERG GROUP, Carlsberg Research Laboratory (Denmark) Deutsche Saatveredelung AG (Germany)
University of Zurich (Switzerland)	BASECLEAR BV (The Netherlands)
University of Basel (Switzerland)	HELIOSPECTRA (Sweden) AGROISOLAB GMBH (Germany)

All PlantHUB doctoral students presented their research projects and their scientific achievements at the three PlantHUB Annual Meetings.

Date	Conference	Place	What?	Target group	Key Messages
27.11.- 29.11.2017	Annual Meeting 1	ETH Zurich (Switzerland)	Oral presentation from all PlantHUB fellows	PlantHUB consortium (~30 participants)	Scientific presentations of all ESRs
19.11.- 23.11.2018	Annual Meeting 2	ETH Zurich (Switzerland)		PlantHUB consortium (~30 participants)	Scientific achievements in scope of the Midterm Review Meeting
19.11.- 20.11.2019	Annual Meeting 3	Carlsberg Research Laboratory, Copenhagen (Denmark)		PlantHUB consortium (~30 participants)	Scientific presentations with focus on the exploitation of the individual projects

Additionally, each fellow presented at a minimum of one conference. In total the PlantHUB doctoral students give **25 poster or oral presentations** at national and international conferences during their fellowship and additionally at several group meetings with their academic and industry partners.

Mercedes Thieme (ESR1) ETH Zurich and Carlsberg Research Laboratory
“Exploiting genetic variation in barley for crop quality improvement”

(January 2017 – December 2019)

Date	Conference	Place	What?	Target group	Key Messages
18.06. - 21.06.2018	Plant Biology Europe 2018 http://www.europlantbiology2018.org/	Copenhagen (Denmark)	Poster presentation	Plant Scientists (~1000 participants)	Methods for high-throughput starch granule analysis, <u>Title of the poster:</u> Detecting Alterations in Starch Granule Morphology by highthroughput Screening
25.06. - 27.06.2018	2nd international Barley Mutant Workshop https://ics.hutton.ac.uk/ibmw2018/	Dundee (Scotland)	Poster presentation	Barley Researcher (~120 participants)	Methods for high-throughput starch granule analysis, <u>Title of the poster:</u> Detecting Alterations in Starch Granule Morphology by highthroughput Screening

Anton Hochmuth (ESR2) ETH Zurich and Carlsberg Research Laboratory
“Using advanced imaging and profiling technologies to map starch biosynthesis in barley endosperm”

(January 2017 – January 2020, 1-month suspension)

Date	Conference	Place	What?	Target group	Key Messages
18.06. - 21.06.2018	Plant Biology Europe 2018 http://www.europlantbiology2018.org/	Copenhagen (Denmark)	Poster presentation	Plant Scientists (~1000 participants)	<u>Title of the poster:</u> Large scale phenotyping of starch granules
25.06. - 27.06.2018	2nd international Barley Mutant Workshop https://ics.hutton.ac.uk/ibmw2018/	Dundee (Scotland)	Poster presentation	Barley Researcher (~120 participants)	<u>Title of the poster:</u> Large scale phenotyping of starch granules

Claudio Cropano (ESR3) ETH Zurich and Deutsche Saatveredelung AG**“Self-fertility for powerful grass hybrids”**

(June 2017 – May 2020)

Date	Conference	Place	What?	Target group	Key Messages
24.06.2019	EGF-Eucarpia Joint Symposium 2019: Improving sown grasslands through breeding and management https://www.egf-eucarpia2019.ch	Zurich (Switzerland)	Oral presentation and poster presentation	Plant breeders and researchers of DSV ~150	Outline and latest achievements of the PhD project. <u>Title of the poster</u> : “Mapping self-compatibility for hybrid breeding in perennial ryegrass”; Oral presentation title: “Mapping self-compatibility for hybrid breeding in perennial ryegrass”
31.10.2019	Agroscope - ETH Research Symposium on Plant Breeding https://worldfoodsystem.ethz.ch/outreach-and-events/past-events/symposium-2019.html	Zurich (Switzerland)	Oral Presentation	Plant breeding scientists of ETH and Agroscope	<u>Title of the presentation</u> : “Natural variation for pseudo self-compatibility in perennial ryegrass – an untapped resource for hybrid breeding”
11.12.2019	PSC Symposium 2019: Plant Response to Environment Across Scales https://www.plantsciences.uzh.ch/en/outreach/conferences/plant-response-across-scales.html	ETH Zurich (Switzerland)	Poster presentation (awarded 2 nd price)	Researchers, students +200	<u>Title of the poster</u> : “Natural variation for pseudo self-compatibility in perennial ryegrass – an untapped resource for hybrid breeding”
11.01.2020	International Plant and Genome Conference https://www.intlpag.org/2020/	San Diego (USA)	Oral Presentation	International scientists	Latest results from PhD work. <u>Title of the presentation</u> : “Mapping of self-compatibility for hybrid breeding in perennial ryegrass”

Maximilian Vogt (ESR4) ETH Zurich and Deutsche Saatveredelung AG

“Exploiting reproductive traits for hybrid breeding in grasses”

(May 2017 – April 2020)

Date	Conference	Place	What?	Target group	Key Messages
24.06.2019	EGF-Eucarpia Joint Symposium 2019: Improving sown grasslands through breeding and management https://www.egf-eucarpia2019.ch	Zurich (Switzerland)	Poster presentation and conference paper	Plant breeders and researchers of DSV ~150	Scientists in the field of molecular plant breeding, plant breeders, grassland scientists, environmental scientists <u>Title of the conference paper:</u> Genetic distance study for improved hybrid breeding in perennial ryegrass (<i>Lolium perenne</i>)

Giacomo Potente (ESR5) University of Zurich and BaseClear

“Efficient capturing and third-generation sequencing of complex genomic regions”

(September 2017 – August 2020)

Date	Conference	Place	What?	Target group	Key Messages
19.08.- 22.08.2018	II Joint Congress on Evolutionary Biology https://www.evolutionmontpellier2018.org/	Montpellier (France)	Poster presentation	Plant Scientists (~2700 participants)	<u>Title of the poster:</u> Sequence and structure of the S-locus supergene controlling distyly in <i>Primula veris</i>

Seydina Issa Diop (ESR6) University of Zurich and BaseClear
“Large-scale isolation and sequencing of full chromosomes”
 (November 2017 – October2020)

Date	Conference	Place	What?	Target group	Key Messages
28.05.2019	URPP Evolution Site Visit 2019	Zurich (Switzerland)	Poster presentation	Scientists students / ~ 100 participants	<u>Title of the poster:</u> Chromosomale-scale assembly of the Marchantia polymorpha genome
21.05.- 22.05.2019	7th Plant Genomics and Gene Editing Congress: Europe	Rotterdam (Netherlands)	Poster Presentation	Scientists researchers and developers / ~ 300	<u>Title of the poster:</u> Chromosomale-scale assembly of the Marchantia polymorpha genome
09.07.- 12.07.2019	Bryology 2019 https://www.bryology2019.com/	Madrid, (Spain)	Oral presentation	Topics: biogeography, ecology, genetics, phylogenetics and physiology together with newer areas like genomics, environmental DNA studies and invasive species.	<u>Title of the talk:</u> Scaffolding full sex chromosomes in Marchantia polymorpha using long-reads

Aya Yokota (ESR7) University of Zurich
“Integrating hyperspectral imaging into phenomic applications for plant stress assays”
 (February 2017 – October2019, terminated earlier)

Date	Conference	Place	What?	Target group	Key Messages
05.06.- 06.2018	VISCEA: Plant Abiotic Stress Tolerance	Vienna (Austria)	Poster Presentation	Scientists specialized in abiotic stress	<u>Title of the poster:</u> Elucidating beta-amylase 1 Regulation for ABA-dependent starch degradation upon Osmotic Stress

Camilo Chiang (ESR9) University of Basel and Heliospectra
“Dynamic control system for multi-channel LED illumination systems to enable near-natural plant growth”

(July 2017 – June 2020)

Date	Conference	Place	What?	Target group	Key Messages
24.06.- 25.06.2018	EPS-1 young http://eps1.org/ePS-Young/	Uppsala (Sweden)	Oral Presentation	Scientists ~120	<u>Title of the presentation:</u> Reaching natural growth: light quality effects on plant performance in indoor growth facilities
25.06.- 28.06.2018	First European Congress on Photosynthesis Research EPS-1 http://eps1.org/Start/	Uppsala (Sweden)	Poster presentation	Scientists ~450	<u>Title of the poster:</u> Reaching natural growth: light quality effects on plant performance in indoor growth facilities
16.06.- 20.06.2019	Greensys 2019 - International Symposium on Advanced Technologies and Management for Innovative Greenhouses www.greensys2019.org	Angers (France)	Poster presentation	+ 600	<u>Title of the poster:</u> Effects of pulsed LED light on plant productivity in a controlled environment
03.12.- 05.12.2019	Ecotron workshop	Bolzen (Italy)	Poster presentation	15	<u>Title of the poster:</u> Reaching natural growth: are we able in our growth facilities?

Florian Cueni (ESR10) University of Basel and Agroisolab “Dynamic isotope model to trace the geographical origin of agricultural products”

(January 2017 – December 2019)

Date	Conference	Place	What?	Target group	Key Messages
15.03.2017	DBU (Deutsche Bundesstiftung Umwelt)	Osnabrück (Germany)	Oral presentation	DBU Committee (ca. 10)	Presentation of preliminary results to pressure group
29.08.2018	VWW Wetzlar	Wetzlar (Germany)	Oral presentation	DBU and VWW Costumers (~15 participants)	Presentation of origin analysis using the stable isotopes of water <u>Title of the talk</u> : Spatial seasonality of of stable isotopes (H and O) in gras seeds
01.10.2018	ASI 2018- Jahrestagung der Arbeitsgemeins- chaft Stabile Isotope e.V. https://www.gasir.de/asi_tagung_2018_raitenhalslach.html	Akademie- zentrum TUM Raitenhalsach (Germany)	Oral presentation	Researchers, students, industry representatives (~200 participants)	Presentation of Results and Interpretation of the experiments conducted in Spring 2018; Session: Food, Forensics, Doping <u>Title of the talk</u> : Can mechanistic water isotope models predict the geographic origin of fruits?
09.04.2019	European Geosciences Union (EGU) General Assembly 2019 https://meetingorganizer.copernicus.org/EGU2019/EGU2019-9079.pdf	Vienna (Austria)	Oral presentation	Researchers (ca. 150 – 200 at the talk, total 16'000 at the conference)	<u>Title of the presentation</u> : Mechanistic Oxygen and Hydrogen isotope models can predict the geographic origin of fruit
27.06.2019	Schönbein Symposium 2019 https://meetingorganizer.copernicus.org/EGU2019/EGU2019-9079.pdf	Basel (Switzerland)	Oral presentation	Public	<u>Title of the presentation</u> : Where's my Strawberry from? - Mechanistic Oxygen and Hydrogen isotope models can predict the geographic origin of fruit

17.09.2019	<p>FIRMS (Fondazione Edmund Mach) 7th Conference of the Forensic Isotope Ratio Mass Spectrometry Network</p> <p>file:///C:/Users/ssabeaa/AppData/Local/Package s/MicrosoftEdge 8wekyb3d8bbwe/TempState/Downloads/Book%20of%20abstrac</p>	San Michele all'Adige, Italy	Oral presentation	Researchers, students, industry representatives	<p><u>Title of the presentation:</u> Predicting the Geographic Origin of Berries using Mechanistic Oxygen and Hydrogen Stable Isotope Models</p>
11.12.2019	<p>PSC Symposium 2019: Plant Response to Environment Across Scales</p> <p>https://www.plantsciences.uzh.ch/en/outreach/conferences/plantresponseacrosscales.html</p>	Zurich (Switzerland)	Poster (awarded 3rd price)	Researchers, students +200	<p><u>Title of the poster:</u> Predicting the Origin of Berries Using Oxygen and Hydrogen Isotope Models</p>

Overview of the PlantHUB projects

Title	Principal Investigators	Name of the ESR	Industry Partner	Fellowship Duration (36 months)
Exploiting genetic variation in barley for crop quality improvement	Prof. Sam Zeeman (ETH) Dr. Ilka Braumann (CLAB)	Mercedes Thieme (f) ESR1	Carlsberg Group, Carlsberg Research Laboratory (CLAB), Denmark	M2 – M37
Using advanced imaging and profiling technologies to map starch biosynthesis in barley endosperm	Prof. Sam Zeeman (ETH) Dr. Ilka Braumann (CLAB)	Anton Hochmuth (m) ESR2	Carlsberg Group, Carlsberg Research Laboratory (CLAB), Denmark	M2 – M37
Self-fertility for powerful grass hybrids	Prof. Bruno Studer (ETH) Michael Koch, Nic Boerboom (DSV)	Claudio Cropano (m) ESR3	Deutsche Saatveredelung AG (DSV), Germany	M7 – M42
Exploiting reproductive traits for hybrid breeding in grasses	Prof. Bruno Studer (ETH) Michael Koch, Wilbert Luesink (DSV)	Maximilian Vogt (m) ESR4	Deutsche Saatveredelung AG (DSV), Germany	M6 – M41
Efficient capturing and third-generation sequencing of complex genomic regions	Prof. Elena Conti, (UZH) Dr. Daniël Duijsings (BaseClear)	Giacomo Potente (m) ESR5	BaseClear BV, The Netherlands	M10 – M45
Large-scale isolation and sequencing of full chromosomes	Dr. Peter Szoevenyi (UZH) Dr. Daniël Duijsings (BaseClear)	Issa Seydina Diop (m) ESR6	BaseClear BV, The Netherlands	M12 – M47
Integrating hyperspectral imaging into phenomic applications for plant stress assays	Dr. Diana Santelia (UZH)	Aya Yokota (f) ESR7	LemnaTec, Germany	M3 – M23 (early termination)
Plant phenotyping to understand mechanisms of salinity tolerance	Dr. Diana Santelia (UZH)	Franco Conci (m) ESR8	LemnaTec, Germany	M2 – M23 (early termination)
Dynamic control system for multi-channel LED illumination systems to enable near-natural plant growth	Dr. Günter Hoch (UBasel) Daniel Bankestad, Johan Lindqvist (Heliospectra)	Camilo Chiang (m) ESR9	Heliospectra AB, Sweden	M8 – M43
Dynamic isotope model to trace the geographical origin of agricultural products	Prof. Ansgar Kahmen (UBasel) Dr. Markus Boner (Agroisolab)	Florian Cueni (m) ESR10	Agroisolab GmbH, Germany	M3 – M38