



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

acaaa gcaattgagt tggatccttc attgacaaaa gcttacctaa gaaaaggaac tgctgtatg aagcttgaag agtatcggac tgctaaaca gctcttgaaa agggcgctc taccacgccc agtgaatc
taagaa gttgatagat gaatgcaatt ttctaatac agaagaagag aaagattgg ttcaaccggt gcttcgact ttgcctcaa gtgtgacagc accaccagta tctgaacttg atgtaccccc agtactacc

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)

Participation at industry fairs

Deliverable 54

Dissemination level: public

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Deliverable D54: Participation at industry fairs

[PlantHUB](#) is an European Industrial Doctoral Programme (EID) funded by the H2020 PROGRAMME Marie Curie Actions – People, Initial Training Networks (H2020-MSCA-ITN-2016). The programme is managed by the [Zurich-Basel Plant Science Center](#) (PSC).

The PlantHUB doctoral students conducted their research projects at the interface of plant breeding and production. The PlantHUB doctoral students gained skills for innovation management and entrepreneurship and responsible research and innovation (RRI).

The PlantHUB training in RRI emphasized the need to maximize the social and economic benefits obtained from knowledge generated through public investments and the need to adopt responsible approaches to this task. The doctoral students were trained to build participatory and responsible RRI actions. The training enhanced the capacity of the doctoral students for a cooperation and better inclusion of their research results to economy and society (incl. civic sectors) through divers' stakeholder and public engagement activities.

The participation at industry fairs or workshops allowed the doctoral students to direct engage with different interest groups (=stakeholders) and to gain an understanding of their interests and concerns about molecular plant breeding and plant production as well as consumer needs.

Moreover, the PlantHUB doctoral students could expand their industrial network and increase their future career choices.

Each student was advised to participate to at least one industry fair.

To learn more about the different PlantHUB outreach activities, please have a look at the following public deliverables, available at the EU research results webpage [CORDIS](#) or: <https://www.plantsciences.uzh.ch/en/research/fellowships/PlantHUB/events.html>

- D26: Open Lab day
- D25: Fascination of Plants Day
- D22: Public Round Table
- D53: Stakeholder activities

Please find below the list of all industry fairs and workshops the PlantHUB doctoral students participated between 2017 and 2020.

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

(January 2017 – December 2019)

Date	Title of Activity	Place	Kind of Activity	Target group	Key Message
04.12.2017	Carlsberg Science to Business Forum	Copenhagen Denmark	Presentation of project	Carlsberg Stakeholders	Exploiting genetic variation in barley for crop quality improvement
Oct 2018	Olma – Agricultural fair	St. Gallen, Switzerland	Preparation and presentation of experiments as part of a large exhibition	Public and stakeholders (Farmers, breeders' industry) ~20'000	Role of starch in plant photosynthesis and biomass production

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

(June 2017 – May 2020)

Date	Title of Activity	Place	Kind of Activity	Target group	Key Message
25.05.2019	AgriTech day – Open field day	ETH Research Station for Plant Sciences in Eschikon, Switzerland	Poster presentation “Self-fertility for powerful grass hybrids”	Public, farmers, scientists ~150	Agriculture of the future - digital and sustainable?
03.09.2019	DSV “Innovation day roughage” – Open field day	DSV Zaden, Netherlands	Presentation of the PlantHUB programme	Public, farmers, advisors, media, interest in plant breeding ~80	Information about the grass breeding efforts of DSV for optimizing the forage quality especially for dairy cows.
24.06.2019	EGF-Eucarpia Joint Symposium 2019: Improving sown grasslands through breeding and management	Zurich (Switzerland)	Oral and poster presentation	Plant breeders and researchers of DSV ~150	Mapping 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	Title of Activity	Place	Kind of Activity	Target group	Key Message
25.05.2019	AgriTech day – Open field Day	ETH Research Station for Plant Sciences in Eschikon, Switzerland	Oral Presentation of the PlantHUB programme and project	Public: farmers, public, scientists ~150	Agriculture of the future - digital and sustainable?
24.06.2019	EGF-Eucarpia Joint Symposium 2019: Improving sown grasslands through breeding and management	Zurich (Switzerland)	Oral and poster presentation	Plant breeders and researchers of DSV, scientists in the field of molecular plant breeding, plant breeders, grassland scientists, environmental scientists ~150	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	Title of Activity	Place	Kind of Activity	Target group	Key Message
14.06.2018	SMRT Informatics Developers Meeting https://www.lgtc.nl/SMRTLeiden/2018/index.html	Leiden (Netherlands)	Attendance	Scientists and developers	

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

(November 2017 – October 2020)

Date	Title of Activity	Place	Kind of Activity	Target group	Key Message
12.06.- 13.06.2018	SMRT Scientific Symposium https://www.lgtc.nl/SMRTLeiden/2018/	Leiden (Netherlands)	Attendance	Scientists and developers ~ 400	Latest Updates on PacBio sequencing, genome assembly and downstream analyses
07.05.- 09.05.2019	SMRT Scientific Symposium	Leiden (Netherlands)	Attendance	Scientists and developers ~ 600	Latest Updates on PacBio sequencing, genome assembly and downstream analyses
21.05.- 22.05.2019	7th Plant Genomics and Gene Editing Congress: Europe	Rotterdam (Netherlands)	Poster Presentation	Scientists and developers ~ 300	Chromosomal-scale assembly of the <i>Marchantia polymorpha</i> genome

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

(January 2017 – December 2019)

Date	Title of Activity	Place	Kind of Activity	Target group	Key Message
29.08.2018	Workshop: Using stable isotopes to trace the origin of annual plants (e.g. grasses)	VWW Wetzlar, Germany	Talk	People interested in the topic 10-20	Origin analysis using the stable isotopes of water, how novel modelling technologies can improve existing methods.
06.11.2018	DLG Food workshop	Frankfurt, Germany	Workshop participation	Public 40	Workshop about current methods and challenge in food authenticity
12.02.- 13.02.2019	Biofach Nürnberg – World leading trade fair of organic products	Nürnberg, Germany	Industry fair, Taking part at the booth of Agroisolab	Public ~51'500	
19.03.2019	Pro Wein, Düsseldorf – Big wine trade fair	Düsseldorf, Germany	Industry fair, Collecting samples and making contacts	Public ~61'500	

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