



Next-Generation Breeders Workshop Geisenheim, 17. – 18. März 2024

Program

Sunday 17/03/2024

- 10:00 – 11:00 Registration & welcome refreshments
- 11:00 – 12:30 Introduction of hosts, group activities
- 12:30 – 13:00 Presentation of the workshop organisation and goals
- 13:00 – 14:00 Lunch
- 14:00 – 15:45 **Predictive breeding approaches to accelerate genetic gain**
- Dr. Michaela Jung (ETH/Agroscope, CH): Development and application of genomic selection in apple
 - Dr. Owen Powell (UQ, AU): Capturing complex genotype-by-environment interactions with hierarchical genomic prediction models
 - Tobias Niehoff (WUR, NL): Exploiting genetic variances of future descendants to enhance genetic progress
- 15:45 – 16:15 Coffee break
- 16:15 – 18:00 **Genetic engineering and biotechnology in breeding**
- Prof. Holger Puchta, (KIT, DE) : Gene editing in plants: basic principles and a historic perspective
 - Dr. Sruthy Maria Augustine (JLU, DE) : DNA-free genome editing: The future of sustainable agriculture
 - Dr. Jeroen Rouppe van der Voort (Enza Zaden, NL) : Vegetable breeding: the past, present and future
- 18:00 – 20:00 Dinner and networking at HGU



Monday 18/03/2024

08:30 – 09:00 Coffee / Registration

09:00 – 11:00 **Exploiting genetic diversity for breeding**

- Dr. Frank Röber (Corteva, DE) : Doubled Haploids- Technology advancements and applications
- Prof. Agnieszka Golicz (JLU, DE) : Leveraging large scale biological datasets for crop improvement
- Dr. Albert Schulthess (IPK, DE): Genomics-informed prebreeding unlocks the diversity in genebanks for wheat improvement
- Dr. Morgane Roth (INRAE, FR) : Using the concept of resilience to address the multi-disease challenge in stone fruit breeding

11:00 – 11:30 Coffee break

11:30 – 13:15 **Accelerating Breeding Cycles**

- Dr. Eric Dinglasan (UQ, AU): Exploring genetic resources using genetic algorithm-guided methodology to develop future crops
- Dr. Dorcus Gemenet (CIMMYT, KE) : TBA
- Dr. Alan Humphries (SARDI, AU) : Applied speed breeding for pasture legumes

13:15 – 14:30 “Meet the expert” - lunch

14:30 – 16:15 **High-Throughput and Precision Phenotyping**

- A/Prof. Daniela Bustos-Korts (UC, CHL): Creating synergies between individual trial analysis and phenotyping over time to predict crop adaptation
- Prof. Lee Hickey (UQ, AU): UAV phenotyping to predict the ‘hidden half’ of barley
- Dr. Hans Daetwyler (Bayer, NL): Digital Phenotyping for Vegetable Crops

16:15 – 16:45 Coffee break

16:45 – 18:30 **Challenges and opportunities for future breeding**

- Prof. Mark Cooper (UQ, AU) : TBA
- Dr. Sofia da Silva (KWS, DE) : Breeding Field Crops in Changing Environments
- Roundtable

19:00 – 21:30 Dinner at a traditional Rheingau “Strausswirtschaft”