

## Lower Saxony – Scotland Joint Forum 2021

23 November 2021

Session II – 1 pm CET

### Genome Enabled Biology and Contemporary Agriculture

#### 1. Workshop Organizers



**Nils Stein. Georg-August University Göttingen, Lower Saxony, Germany**

Nils, plant geneticist by training, has contributed in a leading role to the genome sequencing of the three small grain cereal crops barley wheat and rye. He is currently focused on unlocking genomic diversity at the species level through pan-genome analysis and genebank genomics. Through multi-national collaborations, he uses genomic information to gain better insights into barley biology for application in research and plant breeding.



**Robbie Waugh. Dundee University, Tayside, Scotland**

Robbie has made major contributions to the development and exploitation of barley as both a cereal crop and model for the research and commercial sectors. He developed a range resource that now pervade global basic and applied barley genetics research. He exploits these platforms for high resolution genetic analyses to isolate and characterize genes and networks determining variation in plant morphology and developmental aspects of natural diversity and adaptive traits.

#### 2. Workshop Description

Focusing on barley as an exemplar crop for Scotland and Lower Saxony, the workshop will explore how as a research community we can respond to key issues that are currently impacting crop

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production including the changing climate, demand for lower inputs, soil health and environmental impact concerns. In particular, we aim to discuss how new large scale genetic, genomic and phenomic data gathered and made available by the academic research community as (formalized) knowledge (e.g. in models) alongside new and open digital technologies can be translated into value in commercial end-use sectors to tackle headline global challenges.

### 3. Programme

(The times of the programme items are indicated in CET.)

#### 1 pm Welcoming Addresses

Prof. Dr. Nils Stein

Prof. Dr. Robbie Waugh

#### 1:10 pm Session 1 – Short Presentations

Prof. Dr. Reimund Roetter: *Model-aided design of climate-resilient cereal cultivars.*

Reimund is an agronomist, agrosystems modeller and agro-ecologist with 30 years work experience in Europe, Africa and Asia, dedicated to finding solutions for food security under climate change and resources limitation.

Dr. Joanne Russell: *Understanding and using natural biodiversity.*

Joanne is a geneticist who's research has evolved from interpreting and understanding genetic diversity to using genetic resources for sustainable and resilient barley production. She is currently exploring how biodiverse germplasm can contribute to future crop improvements.

#### 1:30 pm Q&A and Discussion

#### 2:00 pm Coffee Break

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**2:10 pm      Session 2 – Short Presentations**

Prof. Dr. Roy Nielson: *Resilient soils for future-proofing sustainable cereal production*

Roy is a soil ecologist. His expertise lies in understanding functional interactions between plants and soils, mediated by soil biology in the context of food security and sustainable production

Prof. Dr. Stefan Siebert: *Crop water response: upscaling from canopy to global scale*

Stefan is an agronomist and crop scientist, seeking strategies for increasing crop production with reduced environmental footprint. He studies the impact of climate change and variability on crop growth and yield, with focus on water and nutrient availability

**2:30 pm      Q&A and Discussion**

**2:50 pm      Summing Up**

**2:55 pm      Closing**

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