# People

in Bioinformatics









Biodiversity Informatics
Coordinator: Dr. Uwe Scholz



Systems Analysis and Modelling Coordinator: Dr. Jedrzej Szymanski



### **Genebank Documentation**

**Dr. Stephan Weise** 





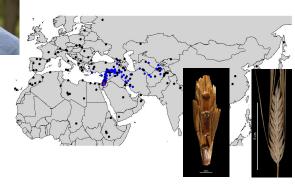
phenotypic data passprinter biodiversity germplasm





# **Domestication Genomics**

**Dr. Martin Mascher** 







# **Bioinformatics and Information Technology**

Dr. Uwe Scholz







Biodiversity Information

#### Compute power:

11 SMP machines with total:

- 528 physical cores
- 13 TB RAM

#### 4 GPU machines with total:

- 128 physical cores
- 2 TB main RAM
- 4 GPU Controller

#### 1 Slurm Cluster

- 1 Control Node (4 Cores, 64 GB RAM)
- 1 Submission Node (virtual machine with 4 Cores, 16 GB RAN
- 3 CPU Compute Nodes (total: 84 Cores, 768 GB RAM)
- 2 GPU Compute Nodes (total: 64 Cores, 3 TB RAM, 2 GPU)
- 10Gbit/s Network Fiber Switch

#### Storage capacity:

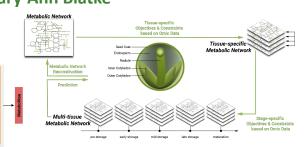
Network attached storage capacity: usable up to 760 TB Storage and archive capacity: 1.5 PB

Network: 2 x 500 Mbit/s internet, 10 Gbit/s internal





# **Integrated Mechanistic Models** Dr. Mary-Ann Blätke

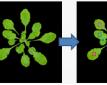


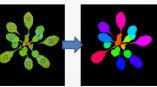


**Image Analysis** 







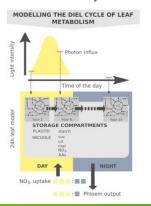


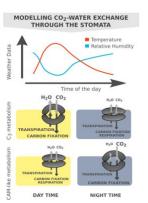






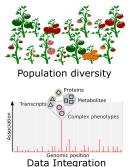
# **Metabolic Systems Interactions Dr. Nadine Töpfer**

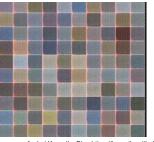




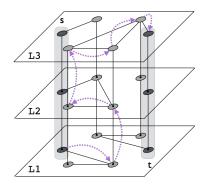


# **Network Analysis and Modelling** Dr. Jedrzej Szymanski

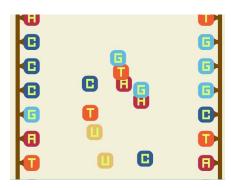




#### 1. Hierarchical Genomic Networks

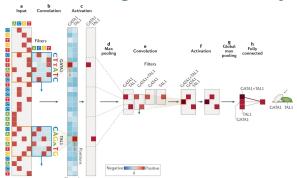


#### 3. Molecular Networks as Game Engines



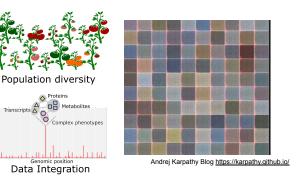
### 2. Artificial Intelligence for Natural Systems







# Network Analysis and Modelling Dr. Jedrzej Szymanski



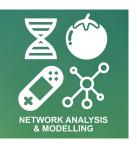
Figures: Eraslan et al. 2019 Nat Rev Genet; Berlage 2016; The Double Helix Game



PhD: Dennis Psaroudakis #Phenomics #QuantitativeGenetics #HeatStress #NetworkAnalysis #MachineLearning



MSc: Bright Enogieru Osatohanmwen #QuantitaiveGenetics #GraphTheory #Phenomics #MetabolicNetworks





PhD: Fritz Forbang Peleke #DeepLearning #GenePromoters #GeneExpression #SequenceToPhenotype



Int: Lea Broschewitz
#GenePromoters
#TranscriptionFactors
#PlantDevelopment
#GeneRegulatoryNetwork



Int: Abul Khayer #RNAsequencing #PlantStressResponse #Statistics



MSc: Daniel Koch #GameDesign #GameDev #MetabolicModelling #PlantDevelopment



Int: Sarah Becker #GeneAnnotation #GeneticVariation #GeneRegulatoryNetwork

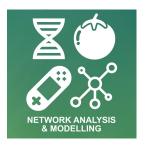


Guest: Dariusz Kruszka #QuantitativeGenetics #SpecializedMetabolism #Lipidomics #MetabolicModelling #MachineLearning



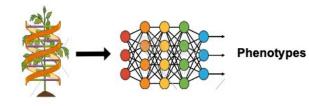
PhD: Dennis Psaroudakis #Phenomics #QuantitativeGenetics #HeatStress #NetworkAnalysis #MachineLearning







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MSc: Daniel Koch #GameDesign #GameDev #MetabolicModelling #PlantDevelopment

