

IRRI Rice Breeding Innovation Platform - Rice Genomics Unit

TERMS OF REFERENCE

Background

The unit where the interns will be placed works on the Genomics of diverse rice, applied Computational Genetics, Bioinformatics and Biosystematics. These efforts create various resources: large-scale sequencing and genotyping datasets (e.g. the 3000 Rice Genomes); pre-breeding populations (RILs, BILs, NAM and MAGIC); high quality, multiple reference genomes for cultivated and wild rice; databases and tools ([SNP-Seek database](#) and the [Rice Galaxy](#)). Breeders, geneticists, and physiologists make use of these to understand the links between genotypes and phenotypes; in other words, what genes or genomic regions are associated with a trait of interest, its expression and regulation. This information can then be applied in current (or future) rice improvement programs using molecular breeding and genomic selection methods.

Functions/Duties and Output Expectations.

The intern will be tasked to do any of the two listed activities below.

1) Data Hub Development

Project will involve developing static and dynamic pages for displaying data from phenotyping trials and background information.

OR

2) Data Analysis of Phenotyping Data

Project will involve analysis of phenotyping data using genome-wide association for datasets across locations. Post-GWAS analyses will follow to determine most likely candidate genes and add support for their involvement in trait(s).

At the end of the internship, the following outputs will be expected:

1. Gained knowledge and skills on data analysis of phenotyping data

Qualifications and Competencies:

For the no. 1 task. The candidate is required to be familiar with HTML and Javascript , basic web development, familiarity with web development frameworks.

For the no. 2 task. The candidate should have a background and knowledge/familiarity with computational tools, and basic R statistics.

Duration of Work:

- Duration of the internship is for 6 months

Duty Station

On-site internship, IRRI HQ, Philippines

IRRI Seed Viability Research & Trait Development Team

TERMS OF REFERENCE

Background

Seed Viability Research & Trait Development (SVRTD) team conducts physiology and genetics research on climate change resilient-traits in rice such as pre-harvest sprouting, lodging resistance, and seed longevity under hot and humid conditions. The team also works closely with the Korea International Cooperation Agency (KOICA) and nine (9) hub-universities in Korea to promote agricultural genomics research in Philippine national universities.

Functions/Duties and Output Expectations

The intern will be provided with the opportunities to learn the following:

- Introduction to IRRI's missions contributing to the UN SDGs
- Physiology and genetics research on climate change-resilient traits in rice
- Assistance in the Korea ODA project to support Philippine national universities
- Business development for collaboration with Korea government agencies and private companies
- Communicating with internal and external experts including senior officers at FAO HQ
- Scientific writing and effective presentation skills

At the end of the internship, the following outputs will be expected:

- The intern will obtain the skill set to develop the project concept note and manage the international agricultural project
- The final presentation will be given for the IRRI and FAO Korea colleagues.

Qualifications and Competencies:

- Undergraduate student with background and knowledge in food security, agricultural research, economics or international development related fields
- Fluent in English
- Proficient in Microsoft Office
- Experience in agricultural project activities funded by Korean government agencies or international organizations preferred

Duration of Work:

- Duration of the internship is for 6 months

Duty Station

- On-site internship, IRRI HQ, Philippines