**Thomas work plan 08-06-2015**

**Task 1: Sort a list of miRNAs of interest in rice, including conserved & non-conserved, rice-specific miRNAs (This needs to be finished within this week).**

1. High priority: Non-conserved miRNAs have more priorities at this stage and please explain reason for this.

2. Why choose these miRNAs? (Currently the analysis will not be restricted to reproductive specific miRNAs as many miRNAs are expressed and have functions in both vegetative and reproductive development).

**Task 2: Looking for SNPs within miRNAs of interest**

1. Explore SNPs in the genome regions of miRNA coding genes, focusing on the stem-loop in the precursor-miRNA including the mature miRNA sequence. Start with non-conserved miRNAs. **You have to get this done asap! No later than this week.**

2. In the near future: Examine SNPs in regions involved in the *DICER-*mediated processing of primary miRNAs to form mature miRNAs (Please read relevant papers about miRNA processing and write a brief 1-2 pages long literature review for it. This is due the week after your presentation). Examine the potential effect of SNPs on the 2nd structure using RNAfold.

4. In the near future: Scrutinize SNPs in the promoter regions of miRNA coding genes, which might involve checking EST data to confirm transcription start site since it may not have been annotated in MSU database.

**Task 3:** **Looking for SNPs within miRNA targets**

1. Examine SNPs in corresponding miRNA binding sites of conserved and non-conserved miRNA targets (MiRNA target may have SNPs with significant impact on plant development. Please quote *OsmiR156* and *HvmiR172* paper)

2. Examine the flanking regions of the miRNA binding sites. Why look up for flanking regions of the binding site? Please read my review on Trends in Plant Science: The functional scope of miRNA-mediated silencing (2014). 19(12), 750-756.

Please try to be as precise as possible with your writing and science, as it is of vital importance in research that you can express yourself clearly and correctly. If you don’t understand something, please: 1. Acknowledge it instead of brushing it over with ambiguous language or expression; 2. Ask for help. In this way, no one would hold you accountable for mistakes, as we are constantly learning and evolving as a human being and scientist. Last but not least, interests and passion is always the best teacher ☺