Xiaoqing Pan

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PROFESSIONAL SUMMARY

Ph.D. candidate in **Microbiology** with a strong background in **fungal biology, RNA-seq analysis, alternative splicing, and computational biology**. Proficient in **R, and Linux** for large-scale genomic data analysis. Experience in **NGS pipelines, A-to-I RNA editing, and molecular techniques**. Passionate about integrating bioinformatics solutions for real-world biotech and healthcare applications. Fluent in **English, German (B1), and Chinese (native)**.

EXPERIENCE

Bioinformatics

- Developed and optimized **RNA-seq pipelines** for differential expression and splicing analysis in human PBMCs responding to fungal infections.
- Integrated **models** to classify alternative splicing and RNA editing patterns.
- RNA-seq analysis to find **potential circular RNAs and their role in rice responding to pathogenic fungi project** and analyze the result with KEGG and GO term

Lab experiments

- Experimental validation support for determining **the role of RNAi machinery and sRNA in *Aspergillus fumigaus*** projects using Northern Blot, PCR, qPCR assays.
- Experimental validation support for determining **non-coding RNAs (sRNAs, lncRNAs, circRNAs) in rice responding to fungal infections** using PCR, qPCR, LC-MS, assays.

Research collaboration

- Provided bioinformatics support for **the role of RNAi machinery in fungi projects** using transcriptomic data. [collaborate with The University of Manchester, The University of Jena]
- Built and automated analysis pipelines for **RNA editing in the host responding to fungal infections.** [collaborate with Fritz-Lipmann-Institut]
- Next generation sequencing analysis pipelines for **non-coding RNA in rice responding to fungal infections**. [collaborate with Sun Yat-Sen University]

EDUCATION

Leibniz-Institut für Naturstoff-Forschung und Infektionsbiologie, Hans-Knöll-Institut, Germany - *PhD Candidate in Microbiology*
June 2021 - PRESENT

South China Botanical Garden, Chinese Academy of Sciences, China - *MSc. in Bioengineering*
Sept 2018 - May 2021

Hainan University, China - *Bsc in Gardening*
Sept 2021 - May 2016

TECHNICAL SKILLS

Bioinformatics: RNA-seq, SHAPE-seq, alternative splicing, variant calling, data visualization

Database & Cloud Computing: Ensembl, UCSC Genome Browser

Molecular Biology: Northern Blot, qPCR

Programming & Tools: R, python, Bash, Git, Docker

Language: English (fluent), German (B1), Chinese (native)

AWARDS & SCHOLARSHIP

DAAD Scholarship
June 2021 - May 2025

Jena School for Microbial Communication (JSMC) travel grant 2023

TEACHING

Microbiology and Molecular Biology - MMB005, 2022 - 2025 (experiment tutor)

HOBBIES

6 km jogging

Eating Schnitzel

Reading Tolstoy

PUBLICATIONS

Pan X*, et al. Human RNA editing patterns reveal disrupted mRNA splicing upon *R. oryzae* stimulation. [in preparation]

Kelani AA*, **Pan X***, et al. (2024). Investigation of *Aspergillus fumigatus* small RNA biogenesis uncovers evidence of double-stranded RNA-dependent growth arrest. [bioRxiv]

Pan X*, et al. (2024). The past, present, and future of RNA modifications in infectious disease research. ACS Infect Dis 10(12), 4017-4029. (review)

Kelani AA, ..., **Pan X**, ..., Blango MG. (2023). Disruption of the *A. fumigatus* RNA interference machinery alters the conidial transcriptome. RNA 29(7), 1033-1050.

Xia K*, **Pan X***, et al. (2023). *X00*-responsive transcriptome reveals the role of the circular RNA133 in disease resistance by regulating expression of *OsARAB* in rice. Phytopathol Res5, 22.

Xia K*, **Pan X***, et al. (2023). Rice miR168a-5p regulates seed length, nitrogen allocation and salt tolerance by targeting *OsOFP3, OsNPF2.4,* and *OsAGO1a*, respectively. J. Plant Physiol 208, 153905.

CONFERENCES

Gordon Research Seminar - RNA Editing, 2025, Italy // Poster

Kiel Conference on Molecular Biology of Fungi, 2024, Germany // Poster

International Student Conference on Microbial Communication, 2024, Germany // Poster

Jena RNA Club Symposium, 2024, Germany // Oral presentation

RNA Society Meeting, 2024, UK // Poster

EMBL - The Non-coding Genome Symposium, 2023, Germany // Poster

The Plant Microverse, 2023, Germany // Attendee

Microverse Meta'omics Symposium, 2022, Germany // Attendee

International Joint Meeting Infection Biology and Antibiotics, 2022, Germany // Poster