

## Biography

I did my Master (2014) in crop genetics and proteomics at Capital Normal University in Beijing China, and obtained my PhD (2020) in plant biochemistry and molecular biology at the University of Western Australia in Perth Australia. I have previously worked in biotech industry for two years before I started my PhD (2015-2017).

### Research interests

My research focuses on advances in quality crop breeding via proteome technologies, especially on wheat quality breeding. Through the combination of *in vivo* stable isotope labelling ( $^{15}\text{N}$ ) and in-depth quantitative proteomics, we could measure and compare crop grain protein turnover rate during grain development, allowing us to define and scale crop protein production energy use efficiency (PEUE) and provide potential solutions to improve PEUE in future crop breeding programme.

I am also working on development a platform that is capable to quickly measure grain proteome in big scale with reasonable low cost, via automatic high throughput sample prep and high-resolution mass spectrometry. This technology/platform will not only be able to find new quality markers, but also can serve as a new tool to accelerate modern agriculture breeding programme.

## Selected Collaborations

**2022-** Recently initiated a collaboration with Prof. Richard Mott at the University of College London (UCL) and Dr. James Cockram at the National Institute of Agricultural Botany (NIAB). This collaboration is proposed to apply advanced mass spectrometry techniques to the wheat diverse MAGIC population to conduct the first PWAS study in wheat, where the population include 500 genetically diverse recombinant inbred lines descended from 16 historical UK bread wheat varieties across 70 years between 1935 and 2004.

**2020-** Collaboration with Prof. Jack Christopher and Prof. Lee Hickey both at the University of Queensland (UQ). This collaboration brings together my knowledge of wheat grain protein quantification with their knowledge of wheat breeding, which aims to develop an innovative platform that could offer an affordable in-season wheat grain protein composition quantification and serve as a new tool for Australian wheat breeding program.

**2018-2021** At the second year of my PhD at UWA I initiated the collaboration with Prof. Wujun Ma at MU in Perth. The collaborated project investigated the molecular mechanism of how the introgression of a HMW glutenin subunit increase wheat grain protein content by approximately 1% without yield penalty. This collaboration has resulted in one publication in 2021 at the impact factor journal of *Molecular & Cellular Proteomics* (IF: 7.0).

## Awards and Honours

**2020** UWA Institute of Agriculture 2020 Postgraduate Showcase presentation award.

**2019** Graduate Research Student Travel Award.

**2017** Australian Research Training Program Fee Offset (RTP); Australian Postgraduate Award (APA) living allowance scholarship; the International Student and UWA Safety-Net Top-Up Scholarship

**2013** Australian-China Centre for Wheat Improvement fellowship.

## Selected Presentations

**2021** Oral presentation at the Australia-China Annual Forum for Wheat Improvement annual conference, China (online).

**2020** Oral presentation at the UWA Institute of Agriculture 2020 Postgraduate Showcase, Australia.

**2019** Oral presentation at the Australia-China Annual Forum for Wheat Improvement annual conference, Australia.

**2017-2022** Poster presentation at the American Society of Plant Biologists (ASPB) worldwide summit; the 1st International Wheat Congress (IWC 2019); the Australian Society of Plant Scientists (ASPS); the Annual Forum of the Centre of Excellence in Plant Energy Biology.