



# 100<sup>th</sup> CRC Seminar

## ***Harnessing targeted proteomics to enhance yield, salinity tolerance and thermal tolerance of wheat.***

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日時：11月28日（月）15：30～17：00

場所：総合教育研究棟 1F 遠隔講義室（生命系スペースC）

Bread wheat (*Triticum aestivum*) is an important crop plant, both nutritionally and economically. Worldwide it is grown on more land than any other commercial crop and is the most important food grain for humans, providing 20% of total calories consumed. Annually ~700 million tonnes is produced with and export value of >USD\$46 billion. The amount of land available for crop production is in decline, but the demand for food is increasing. In fact, the Food and Agriculture Organization of the United Nations estimates that the global demand for food will double by 2050, thereby intensifying the need to improve wheat yields and to breed varieties that can utilise low quality agricultural land. The genetic history of wheat is complex, it was domesticated 10,000 years ago and due to two historic hybridisation events it has a hexaploid genome with six sets of chromosomes. This has resulted in an extremely large genome consisting of 17 Gb, which is ~ 5 times larger than the human genome and despite extensive efforts, it is yet to be completely sequenced. This makes proteomics approaches and analysis in wheat challenging. To meet this challenge, we have been developing a SRM database for wheat that is analogous to the human SRMAtlas and it is soon to be released publically. During its development we have been able to leverage this database to study the wheat proteome response to both salinity and cold exposure. From these studies we have been able to identify novel responses of wheat by mapping both proteomic and metabolite changes on to metabolic networks to identify bottlenecks and investigate these using classical plant biochemistry. Detailed knowledge of these molecular processes that underpin environmental responses of wheat may enable the breeding of improved varieties, with higher yields or improved stress tolerance.

Taylor 博士は日豪若手研究者交流促進事業により来学されます。セミナーの後、Taylor 博士との懇談会を予定しています（7号館3F セミナー室）。皆様のご参加をお待ちしております。

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