Name: Wasim A Iqbal

Profile:

My research focuses on global problems including the global burden of disease, climate change and food insecurity. Without mitigation, climate change is a significant threat to life and human progress. By mitigating climate change, we can reduce food insecurity, by reducing global food insecurity we can drive down the global burden of disease.

My recent work has focused on predicting improvements in crop photosynthesis using an Earth like model. Our group found that ~50-25% improvements in crop carbon uptake could be achieved if the key rate-limiting enzyme of photosynthesis-Rubisco-was modified (Iqbal et al 2021). My current work involves producing tools that will aid modellers predicting global plant photosynthesis and molecular biologists modifying crop photosynthesis in the laboratory.

I am also involved in a systematic review and meta-analysis looking at the relationship between whole grain dietary intake and non-communicable diseases (Iqbal et al 2021). Cereals including whole grains contribute roughly 50% human intake and some cultures, cereals including whole grains are staple foods. Unlike refined grains (e.g. white flour) whole grains are nutrient rich and have been associated with favourable effects on human health. However, the evidence supporting the latter sometimes show no benefits at all or are minor. Our review aims to summarise the available evidence linking whole grains with human health to support universal dietary recommendations and a whole grain definition.

Publications:

**Wasim A Iqbal**, Isabel G Miller, Rebecca L Moore, Iain J Hope, Daniel Cowan-Turner, Maxim V Kapralov, Rubisco substitutions predicted to enhance crop performance through carbon uptake modelling, Journal of Experimental Botany, Volume 72, Issue 17, 2 September 2021, Pages 6066–6075, <https://doi.org/10.1093/jxb/erab278>

**Wasim A Iqbal**, Gavin B Stewart, Abigail Smith, Linda Errington & Chris J Seal (2021) PROTOCOL: The association between whole-grain dietary intake and noncommunicable diseases: A systematic review and meta-analysis. *Campbell Systematic Reviews*, 17, e1186. <https://doi.org/10.1002/cl2.1186>

**Wasim A. Iqbal**, Ines Mendes, Kieran Finney, Anthony Oxley & Georg Lietz (2021) Reduced plasma carotenoids in individuals suffering from metabolic diseases with disturbances in lipid metabolism: a systematic review and meta-analysis of observational studies, International Journal of Food Sciences and Nutrition, 72:7, 879-891, DOI: [10.1080/09637486.2021.1882962](https://doi.org/10.1080/09637486.2021.1882962)