

# FST Webinar Series 2022

## Biosensors and intelligent packaging to improve **food safety** and reduce **food waste**

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Food safety is a critical and enduring challenge. Each year in the U.S. alone, about 48 million people get sick, and 3000 die due to food borne illnesses. The associated economic loss is estimated at 15.6 billion. Globally, the World Health Organisation estimates that almost 600 million people fall ill from consuming contaminated foods, and among them, 420,000 die.



Another important issue facing the world is food waste. In the U.S., 30 - 40% of the food supply is wasted. In addition, according to the United Nations Food and Agriculture Organization, food waste is responsible for about 3.3 gigatons of greenhouse gas emissions annually. In other words, if food waste were a country, it would rank just below the U.S. and China as the world's third-largest carbon emitter. Food waste has therefore emerged as a serious environmental, economic, and social challenge. In the U.S., a plurality of food waste, costing approximately \$240 billion annually, takes place at the consumer level; and one-fifth of food waste within U.S. consumers' homes is attributable to wholesome food being thrown away, mainly because of the confusing array of date labels displayed on food packaging, such as "Best if Used By", "Use By", "Sell By", and "Enjoy By".



Dr. Wang's laboratory is developing two engineered approaches – biosensors and intelligent packaging – that can potentially be used to address these two critical issues. The former are devices that can be used to detect foodborne contaminants, and the latter can potentially provide real-time information about food quality so that consumers and other food-industry stakeholders can make better decisions about when to keep, consume, or throw away food products. This talk will introduce these two approaches, including their development and specific ways they might be used to address these critical challenges.

**Open for NUS-FST students and alumni (sign-up required)**

Date: 24 May 2022 (Tuesday)  
Time: 9.30 am - 10.30 am  
Venue: Zoom

