

## COMMUNICATING EMERGING SCIENCE TO THE PUBLIC

### STATEMENT OF RESEARCH PROJECT

The primary objective of this research is to gain an empirical understanding of the social-psychological factors that shape public perception of nano-enabled food products in Singapore and the U.S. We will then use the results in the design of a food-grade nutraceutical-encapsulating carrier system for it to achieve greater receptivity by the public in both countries.

Food is a tangible product that people directly interact with everyday, which perhaps leads to a great range of judgment formation for the public unlike other products. To a large extent, the success or failure of nano-enabled food products rely on public acceptance of the novel technology. Numerous studies have found that a large proportion of the public are not familiar with nanotechnology in food and is unsure of whether its benefits outweigh the risk or vice versa. Social-psychological factors such as perceived benefits, trust and perceived risks can influence public acceptance of innovative food technologies. Similarly, factors such as costs, endorsing agencies, news media exposure, governmental outreach, message framing, public attitude towards science and technology, and trust in government regulations are the main considerations that the public use in making decisions about the use of food products processed with novel technologies and other applications of nanotechnology.

Generally, studies on nanofood are scant which presents a significant challenge for the safe and effective development of the nanofood industry. Not only that, most of the extant studies about nano-enabled food were conducted in North America and parts of Europe, often without considerations for consumers in Asia. Using Singapore as a context in Asia, we seek to gauge public understanding and perceptions of risks and benefits of nanotechnology food products, and to evaluate the potential real-life exposure of individuals to engineered nanoparticles found in food products. A large-scale nationally representative survey of 1,000 Singaporeans and permanent residents will be conducted. Prior to data collection, we will conceptualize and operationalize the survey questionnaire and conduct pretests of the questionnaire to enhance the face validity of the instruments through early elimination of discrepancies. Following this, we will administer a door-to-door household survey. We will use the collected survey data to conduct multivariate statistical analyses. It is worthy to note that this is part of a multi-year interdisciplinary project under the NTU-Harvard Initiative for Sustainable Nanotechnology Program.

### SCOPE OF WORK FOR SELECTED PHD STUDENT

The selected PhD student is expected to conduct a comprehensive literature review in the general area of science communication and in the specific area of public perception of nanotechnology and nano-enabled food. S/he will be responsible for preparing the sample population database, design and pre-test survey questionnaire, administer the survey and collect the survey data. S/he will prepare and analyze the survey data, and write the report. Parts of the reports from the study will culminate in the PhD student's final dissertation.