The Australian Society of Rheology, Inc.

2022 Rheology Lecture Series

CAV Reg. No. A0055806E

The Australian Society of Rheology is presenting a national series of lectures, which is open to anyone interested in the flow and deformation of matter. The next event in the series will be held online.

Calendar details

Date:	**Tuesday, December 6, 2022**
Time:	10:00 to 11:30 AM (Melbourne, Australia)
Event Registration Link:	https://www.eventbrite.com.au/e/australian-society-of-rheology-seminar-06-december-2022-registration-464242109647

Invited lecture

Dr. Helen Joyner

Material characterization specialist at Perfect Day, Bay Area California

Bridge or Fence? Connecting Rheometry and Sensory Texture

Abstract: Rheometry is a powerful tool for evaluating food products, but there are major challenges matching rheological measurements to food texture as experienced by a human. Traditionally, food viscosity profiles, viscoelastic properties, and fracture properties have been used to indicate attributes related to first bite or similar initial texture experiences. More recently, tribology has been used to evaluate thin-film food behaviors, and significant effort has been spent developing relationships between tribological behaviors and food texture during the later stages of mastication. However, food texture is quite difficult to quantify using instrumental measurements. Key challenges include replicating the complex oral movements, introduction and mixing of saliva with the food during measurement, accounting for temperature changes, selection of rheological parameter(s) to measure, and data interpretation, including understanding how food compositional and structural changes impact rheological measurements. Texture of simple fluids, such as milk and juice, is relatively easy to predict using rheometry. More complex foods, especially those that undergo significant changes in oral processing such as ice cream, crackers, or meat products, have major texture changes that are difficult to predict with standard rheometry. While recent advances in food rheometry are beginning to fill this gap, significant work remains before rheometry can be used for universal prediction of food textures.

Speaker's biography

Dr. Helen Joyner has a B.S. in Chemical Engineering and an M.S. and Ph.D. in Food Science. After getting her Ph.D. from North Carolina State University in 2012, she worked as a postdoctoral researcher in rheology for a few years, then started as an Assistant Professor in the School of Food Science at the University of Idaho in 2013. At the University of Idaho, she continued her research in rheology and tribology and taught a number of courses, including Food Engineering, Food Quality Management, Sensory Analysis of Dairy Products, and Food Rheology. She was tenured and promoted to Associate Professor in 2019. Shortly after, she went on sabbatical to Perfect Day in the Bay Area of California, where she led the effort to establish a material characterization program for Perfect Day's food products. Because she enjoyed this work so much, she shifted her career path to industry and is now working as the material characterization specialist for Perfect Day's Food Team. Her work in material characterization involves instrumental and sensory testing of a wide variety of food products. Dr. Joyner is also active in the Society of Rheology, is an Associate Editor for the Journal of Food Science, has served on several grant review panels, and

reviews articles for a number of scientific journals. When she isn't working on professional activities, she can probably be found spending time with her eight-month-old daughter or reading, most likely with a cat curled up next to her.

Enquiries may be directed to Dr Mark Coghill (Mark.Coghill@riotinto.com).