

# SPRING MEETING '21

TUESDAY, APRIL 20

- 10am - 6pm** **Registration & Information**
- 12:30 - 2pm** **Future Leaders Committee Meeting**
- 2 - 5pm** **Manufacturing & Technology Committee Meeting**
- 4 - 5pm** **Supplier Advisory Committee Meeting**
- 5:30 - 7pm** **Welcome Reception — Inner Terrace**  
Make new contacts and get reacquainted with industry friends while arranging dinner plans at popular nearby restaurants.

WEDNESDAY, APRIL 21

- 7am - 2pm** **Registration & Information**
- 7:30 - 8:15am** **Breakfast & Opening Remarks**  
**Noah Bass, PPI President, Best Maid Products, Inc.**
- 8:30 - 9am** **Table Olives: Source and Carrier of Probiotic Microorganisms**  
**Dr. Francisco Noé Arroyo López, Spanish National Research Council (CSIC), Sevilla, Spain**
- Table olives are one of the most important fermented vegetable in the Mediterranean area. In recent years, researchers have isolated native microorganisms from table olives with probiotic potential, with ability to adhere and form biofilms on olive epidermis, turning table olives in a splendid carrier of beneficial microorganism to consumers.
- 9 - 9:30am** **Overview of Precision Agriculture Technologies for In-Field Automation and Sensing**  
**Dr. Sierra Young, Biological and Agricultural Engineering, NCSU**
- Automated sensor technologies and robotics are becoming important tools for precision agriculture applications in fruit and vegetable production, including pickled products. Sierra will present an overview of current and future research on robotics and precision agriculture technologies, including ground and aerial vehicles, and other image-based sensors, with a focus on opportunities for pickle production.
- 9:30 - 10am** **Acidified Foods Process Authority**  
**Nicholas Fragedakis, Director, Entrepreneur Initiative for Food, Dept. of Food, Bioprocessing, and Nutrition Sciences, NCSU**
- Nick serves as an Acidified Foods Process Authority for the food industry by evaluating formulations and processes to ensure the safe manufacture of acidified, acid, and low water activity foods. He will share program updates important to small, medium, and large food processors.

RENAISSANCE RALEIGH HOTEL AT NORTH HILLS  
RALEIGH, NORTH CAROLINA

CO-HOSTED BY NORTH CAROLINA STATE UNIVERSITY  
AND USDA ARS RALEIGH

- 10 - 10:30am** **Presence and Persistence of Bitter Molecules in Pickling Cucumber**  
**Xinyue Fan, Graduate Research Assistant, Department of Food, Bioprocessing, and Nutrition Sciences, NCSU**  
**Dr. Suzanne Johanningsmeier, USDA-ARS Food Science and Market Quality & Handling Research Unit**
- Bitterness is rare in pickling cucumber, but it can result in consumer rejection leading to losses of entire lots of pickle products. Xinyue and Suzanne will share the challenges and progress in their research to study the occurrence and stability of bitter compounds in pickling cucumber during acidification and fermentation.
- 10:30 - 11am** **Phages - Novel Biocontrol Agents of Bacteria that Cause Bloater Defect, Foodborne Illness, or Food Spoilage**  
**Dr. Jean Lu, Department of Molecular and Cellular Biology, Kennesaw State University**
- The use of phages as antibacterial agents has several advantages over traditional antibacterial methods. They only infect specific bacterial hosts and cause rapid bacterial lysis. Phages specific for pathogenic bacteria do not disrupt normal microflora in humans or in animals, and do not alter food quality, such as taste, composition, aroma, or color.
- 11 - 11:30am** **What's Ahead for Nutrition and Functional Foods in the Next 5-10 Years?**  
**Dr. Mary Ann Lila, Director, Plants for Human Health Institute, NCU**
- Nutrition in general, and functional foods in particular, have a conspicuous effect on the resilience of the human body because they effectively deliver multi-layered immune-protective benefits. More now than ever before, American consumers are looking for dietary strategies to boost the immune system.
- 11:30 am - Noon** **Pickles in a Pickle: Trying to Outsmart Pseudoperonospora cubensis, the Cucurbit Downy Mildew Pathogen**  
**Dr. Lina Quesada-Ocampo, Dept. of Entomology & Plant Pathology, NCSU**
- Lina will discuss research performed in recent years to better understand the biology, epidemiology, and management of downy mildew in pickling cucumber and other cucurbit crops. This session will cover research advances as well as recommendations important to key pickle producing regions to limit disease losses.
- 12:30 - 5:00 pm** **Bus Box Lunch & Tour - USDA ARS and NCSU Research Labs**  
Everyone signed up to participate will receive a box lunch on the bus.
- 6:00 - 7:30 pm** **BBQ Reception - The Q Shack (lawn), Main Street, North Hills**
- All Spring Meeting '21 attendees are welcomed to attend and enjoy pulled pork barbeque, pulled chicken, beef brisket, slaw, beans, potato salad, macaroni and cheese, rolls & hushpuppies, and banana pudding. Tea, lemonade, beer and wine will be served.

THE PPI SPRING MEETING '21 WILL PROVIDE IMPORTANT EDUCATIONAL INFORMATION AND UNMATCHED NETWORKING OPPORTUNITIES.

THURSDAY, APRIL 22

7:30am - Noon

**Registration & Information**

8 - 8:30am

**Continental Breakfast**

8:30 - 9am

**Yeasts and Molds in Brines - Can They be Controlled?**

**Dr. Ilenys Pérez-Díaz**, USDA-ARS Food Science and Market Quality & Handling Research Unit

Ilenys will describe the diversity of the indigenous yeast and mold populations in cucumber fermentations and discuss how these microbes impact processing. She will also describe how the use of potassium sorbate and other chemicals found in nature can control their proliferation and/or survival in acidified products.

9 - 9:30am

**Food Science Ed Online: Examples and Lessons Learned**

**Dr. Clint Stevenson**, Dept. of Food, Bioprocessing and Nutrition Sciences, NCSU

Pickling 101 online? Clint will review several examples in which online courses were developed using different approaches to project management, incorporation of instructional technologies, and methods of recruitment and audience retention. Online learning has come a long way since it started in the 1990s. Today we can learn from many examples of online courses that have been developed throughout the food industry.

9:30 - 10am

**Buffer Modeling for Increased Food Safety**

**Dr. Fred Breidt**, USDA-ARS Food Science and Market Quality & Handling Research Unit

The safety of small scale ready-to-eat fermented foods is an important research initiative for preventing disease outbreaks. This is tricky as these fermentations tend to be mixed acid fermentations and include many types of fermented products. Buffer modeling may help lead to needed safety guidelines.

10 - 10:30am

**CucCAP2 Economics 2021-24: Towards Measuring the Industry's Valuation of Improved Cucurbit Varieties**

**Dr. Daniel Tregeagle**, Agricultural and Resource Economics, NCSU

The USDA has just funded CucCAP2, a \$7 million grant to continue improving disease resistance in cucurbits. Daniel is leading the economic analysis of this research and will describe his proposed research methods for measuring the industry's valuation of these improvements. A series of industry surveys are planned - he seeks your input!

10:30 - 11am

**Applications of Continuous Flow Microwave Heating for Processing of Pickled and Acidified Products**

**Dr. Josip Simunovic**, Dept. of Food, Bioprocessing, and Nutrition Sciences, NCSU

Continuous flow microwave heating is an advanced processing technology with a growing number of industrial installations and a broad and flexible product application range. Existing and emerging applications for pickled, acid, and acidified products will be discussed for consumer, food service and industrial ingredient market segments.

11 - 11:45am

**Tank Yard Quality Panel**

**Joe Hausbeck**, Hausbeck Pickle Co. | **Lisa Moeller**, Fashionably Pickled, LLC

**Dr. Suzanne Johanningsmeier**, USDA-ARS | **Dr. Ilenys Pérez-Díaz**, USDA-ARS

This expert panel will discuss issues affecting fermentations and new research initiatives. Texture quality retention, changes in flavor and aroma compounds, secondary fermentation by lactic acid bacteria, culprits of bloater defects, microbes that cause spoilage, preservative-free fermentations, understanding pH, addition of calcium chloride, freeze-induced tissue damage, and more will be discussed.

11:45am

**Prize Drawing and Closing Comments**

11:50am

**Adjourn**