

**Proceedings of  
The United States -Japan  
Cooperative Program in Natural Resources  
Food and Agriculture Panel 46<sup>th</sup> Annual Meeting**



**UJNR 2017**

**Hiroshima, Japan**

**Nov. 11(Sat.)-15(Wed.), 2017**

# Program

## 46th Annual Meeting of Food and Agriculture Panel United States-Japan Cooperative Program in Natural Resources (UJNR)

Hiroshima, Japan  
November 11 - 15, 2017

### November 11 (Saturday) Arrival of US Delegates

### November 12 (Sunday) Opening Session

Hotel Mielparque-Hiroshima

14:00-14:30	Registration for US Delegates	Room "Aki," 6F
14:30-14:35	Opening Remark	
14:35-15:25	Keynote Lectures	
<b><u>15:25-15:40</u></b>	<b><u>Coffee Break</u></b>	
15:40-16:30	Keynote Lectures	
16:30-17:00	Group Photos	
17:30-19:30	Welcome Reception	Room "Seto," 5F

### November 13 (Monday) Technical Sessions

### Food Nutrition & Functionality and Food Technology Sessions

Room "604," Satellite Campus Hiroshima

9:10-10:10	Food Nutrition & Functionality Session	(4 presentations)
<b><u>10:10-10:30</u></b>	<b><u>Coffee Break</u></b>	
10:30-11:30	Food Nutrition & Functionality Session	(4 presentations)
<b><u>11:30-13:00</u></b>	<b><u>Lunch (on your own)</u></b>	
13:00-14:15	Food Nutrition & Functionality Session, Roundup	(4 presentations)
14:15-15:00	Food Technology Session	(3 presentations)
<b><u>15:00-15:20</u></b>	<b><u>Coffee Break</u></b>	
15:20-17:05	Food Technology Session	(7 presentations)

### November 14 (Tuesday) Technical Sessions

### Food Technology and Food Safety Sessions

Room "604," Satellite Campus Hiroshima

9:10-9:55	Food Technology Session, Roundup	(2 presentations)
<b><u>9:55-10:15</u></b>	<b><u>Coffee Break</u></b>	
10:15-11:30	Food Safety Session	(5 presentations)
<b><u>11:30-13:00</u></b>	<b><u>Lunch (on your own)</u></b>	
<b><u>11:30-13:00</u></b>	<b><u>Panel Member Meeting</u></b>	
13:00-14:45	Food Safety Session, Round up	(6 presentations)
14:45-14:50	Closing Remark	

**November 15 (Wednesday) Study Tour (by chartered buses)**

8:00 Leaving Hotel Mielparque-Hiroshima  
10:00-12:00 Head Office, Satake Corporation  
**12:30-13:30** **Lunch**  
13:50-15:00 National Research Institute of Brewing  
17:00 Bus No.1: Arriving at Hiroshima Airport Hotel  
16:00 Bus No.2: Arriving at Higashi-Hiroshima Station

**November 16 (Thursday) Departure of US Delegates**

**Opening Session**  
**Room "Aki" (6F), Hotel Mielparque-Hiroshima**

**November 12 (Sunday) 14:30 - 16:30**

**Chairs: Hiroshi Nabetani and Sevim Z. Erhan**

**Opening Remark**

14:30-14:35     Ken Tokuyasu (FRI, NARO)

**Keynote Lectures**

14:35-15:00     **Research Topics at NFRI** 1

Hiroshi Nabetani (FRI, NARO)

15:00-15:25     **Overview of the Eastern Regional Research Center (ERRC) Projects for Future** 3

**Collaboration**

Sevim Z. Erhan (USDA-ARS-ERRC)

**15:25-15:40**     **Coffee Break**

15:40-16:05     **Recent trends in food safety in Japan:** 5

**Food poisoning and antimicrobial resistance**

Tadashi Shimamoto (Graduate School of Biosphere Science, Hiroshima University)

16:05-16:30     **An Overview of Food Research Including Quality, Safety, Nutrition, and** 7

**Functionality and the Potential for Strengthening the Collaboration Between  
ARS and Japanese Scientists.**

Dariusz Swietlik (USDA-ARS-NEA)

**Technical Sessions**  
**Room”604” (6F), Satellite Campus Hiroshima**

**November 13 (Monday Morning) 9:10-11:30**

**Food Nutrition & Functionality Session**

**Session Leaders : Yoko Takahashi and Soheila Maleki**

9:10-9:25	<b>Allergic cross-reactivity among peanut and tree nut allergens</b>	9
	<u>Soheila J. Maleki</u> , Catherine H. Schein and Barry Hurlburt (USDA-ARS-SRRC)	
9:25-9:40	<b>IgE Epitopes Critical for Eliciting Mast Cell Activation and Allegic Symptoms in Peanut Allergy</b>	11
	<u>Barry K. Hurlburt</u> , Alexandra F. Santos, Hsiaopo Cheng, Nuno Barbosa-Morais, Gideon Lack and Soheila J. Maleki (USDA-ARS-SRRC)	
9:40-9:55	<b>Use of far- and deep-UV spectroscopy: An application to salinity measurement</b>	13
	<u>Akifumi Ikehata</u> (FRI, NARO)	
9:55-10:10	<b>Analysis of radicals in foods using Electron Spin Resonance Spectroscopy</b>	15
	<u>Hiromi Kameya</u> (FRI, NARO)	
<b><u>10:10-10:30</u></b>	<b><u>Coffee Break</u></b>	
10:30-10:45	<b>X-ray based irradiation of Navel Orangeworm for Sterile Insect Control</b>	17
	<u>Ron Haff</u> , Inna Ovchinnikova, and Doug Light (USDA-ARS-WRRC)	
10:45-11:00	<b>Phytosanitary irradiation for market access of fresh produce</b>	19
	<u>Peter A. Follett</u> (USDA-ARS-US-PBARC)	
11:10-11:15	<b>Restoration of chronic kidney disease by dietary fermentable fiber in mice</b>	21
	<u>Takuya Suzuki</u> (Graduate School of Biosphere Science, Hiroshima University)	
11:15-11:30	<b>A possible novel mechanism underlying heart-protective effects of vitamin B6</b>	23
	<u>Thanutchaporn Kumrungsee</u> , Dwi Eva Nirmagustina, Noriyuki Yanaka and Norihisa Kato (Graduate School of Biosphere Science, Hiroshima University)	
<b><u>11:30-13:00</u></b>	<b><u>Lunch Break (on your own)</u></b>	

## **November 13(Monday Afternoon) 13:00-17:05**

### **Food Nutrition & Functionality Session (13:00-14:15)**

**Session Leaders : Yoko Takahashi and Soheila Maleki**

13:00-13:15	<b>Improvement and inter-laboratory validation of methods for antioxidant capacity assessment</b>	25
	<u>Manabu Wakagi</u> (FRI, NARO)	
13:15-13:30	<b>Foods with Function Claims (a new type of Foods with Health Claims) has been launched in Japan: Development of high-<math>\beta</math>-conglycinin soy foods</b>	27
	<u>Yoko Takahashi</u> (FRI, NARO)	
13:30-13:45	<b>Global view of postprandial blood transcriptomes reveals subject specific pattern of expression for innate immunity genes after a high fat meal</b>	29
	Danielle G Lemay, Shurong Huang, Liping Huang, Catherine Kirschke, Zeynep Alkan, Dustin J Burnett, Ellen L Bonnel, Leslie R Woodhouse, Elaine Wang, Evelyn Holguin, and <u>Daniel H Hwang</u> (USDA-ARS-WHNR)	
13:45-14:00	<b>Curcumin alters gene expression and lipid profiles in visceral adipose tissue of diet-induced obese mice</b>	31
	<u>Masuko Kobori</u> , Yumiko Takahashi, Hiroaki Takeda, Masatomo Takahashi, Yukari Akimoto, Mutsumi Sakurai, Hideaki Oike, Yoshihiro Izumi, Takeshi Bamba, Toshiyuki Kimura (FRI, NARO)	
14:00-14:15	<b>Roundup</b>	

### **Food Technology Session (14:15-17:05)**

**Session Leaders : Motomitsu Kitaoka and LinShu Liu**

14:15-14:30	<b>Efficient production of a novel family of glycolipids by <i>Rhodospiridium paludigenum</i></b>	33
	<u>Junichi Mano</u> (FRI, NARO)	
14:30-14:45	<b>Taste Property of Sophorolipid for Potential Foods and Feeds Applications</b>	35
	<u>Daniel K.Y. Solaiman</u> , Richard D. Ashby and Mehmet Hakan Ozdener (USDA-ARS-ERRC)	
14:45-15:00	<b>Enzyme activities involved in the quality of rice bran oil</b>	37
	<u>Tomoya Okunishi</u> , Reila Ichimura, Hiroshi Okadome, Itaru Sotome and Yasumasa Ando (FRI, NARO)	
<b><u>15:00-15:20</u></b>	<b><u>Coffee Break</u></b>	
15:20-15:35	<b>New technologies developed for food protection and preservation through inter- and intra- agency networking</b>	39
	<u>LinShu Liu</u> , Jamshed Bobokalonov, Yanhong Liu, Majher Sarker, Tasnuva Shahrin, Shiohshuh Sheen, Jinwen Zhang, Kit Yam and Peggy Tomasula (USDA-ARS-ERRC)	
15:35-15:50	<b>Production and stability evaluation of monodisperse emulsions loaded with bioactives using microchannel arrays</b>	41
	<u>Isao Kobayashi</u> (FRI, NARO)	

15:50-16:05	<b>Crop Genetic Diversity and New Opportunities for Improving Processed Food Quality</b>	43
	<u>John R. Stommel</u> and Yaguang Luo (USDA-ARS-BARC)	
16:05-16:20	<b>Cell structure-based electrical circuit models for food quality assessment -Relationships between electrical properties of cell structures and mechanical properties-</b>	45
	<u>Takashi Watanabe</u> (FRI, NARO)	
16:20-16:35	<b>Khellin and Visnagin, Furanochromones from <i>Ammi visnaga</i>, as Potential Bioherbicides</b>	47
	<u>Charles L. Cantrell</u> , Maria Lucia Travaini, Gustavo M. Sosa, Helmut Walter and Stephen O. Duke (USDA-ARS, NPURU, Oxford, MS)	
16:35-16:50	<b>Reusable floating beads with immobilized yeast cells for fermentation of pretreated rice straw</b>	49
	<u>Ken Tokuyasu</u> , Di Guan, Masakazu Ike, and Yoshikiyo Sakakibara (FRI, NARO)	
16:50-17:05	<b>Practical one-pot enzymatic glycosylation from free monosaccharide using novel ATP-regeneration system</b>	51
	<u>Motomitsu Kitaoka</u> and Mamoru Nishimoto (FRI, NARO)	

## **November 14 (Tuesday Morning) 9:10-11:30**

### **Food Technology Session (9:10-9:55)**

**Session Leaders : Motomitsu Kitaoka and LinShu Liu**

9:10-9:25	<b>Research on tailoring the physical properties of oleogels for replacement of saturated fats and trans fats in foods</b>	53
	<u>Jill K. Winkler-Moser</u> , Hong-Sik Hwang, Frederick Felker and Sean X. Liu (USDA-ARS-NCAUR)	
9:25-9:40	<b>Effect of stepwise baking on the quality of bakery product</b>	55
	<u>Kiyoshi Kawai</u> (Graduate School of Biosphere Science, Hiroshima University)	
9:40-9:55	<b>Roundup</b>	
<b><u>9:55-10:15</u></b>	<b><u>Coffee Break</u></b>	

### **Food Safety Session (10:15-11:30)**

**Session Leaders : Kazutaka Yamamoto and Pina Fratamico**

10:15-10:30	<b>Application of high hydrostatic pressure to the processing of pickled fish in brine or broth</b>	57
	<u>Kazutaka Yamamoto</u> , Mika Hirose, Takahiro Kuroda and Yoshiko Nakaura (FRI, NARO)	
10:30-10:45	<b>Use of predatory bacteria and bacteriophage as processing interventions against <i>Vibrio parahaemolyticus</i> and <i>Vibrio vulnificus</i> in shellfish</b>	59
	<u>Gary P. Richards</u> and Michael A. Watson (USDA-ARS-ERRC)	
10:45-11:00	<b>Properties of <i>Bacillus subtilis</i> vegetative cells injured by high hydrostatic pressure</b>	61
	<u>Takashi Inaoka</u> , Nguyen Thi Minh Huyen, Keitarou Kimura, Yoshiko Nakaura and Kazutaka Yamamoto (FRI, NARO)	
11:00-11:15	<b>Sequence-based other methods for molecular serotyping of <i>E. coli</i></b>	63
	<u>Pina M. Fratamico</u> (USDA-ARS-ERRC)	
11:15-11:30	<b>Rapid Quantitative Monitoring for the Growth of <i>Salmonella</i> Enteritidis in Chicken Juice by Real Time PCR</b>	65
	Fia Novianti, Yukie Hosotani, Shigenobu Koseki, Yasuhiro Inatsu and <u>Susumu Kawasaki</u> (FRI, NARO)	
<b><u>11:30-13:00</u></b>	<b><u>Lunch Break (on your own)</u></b>	



## **November 14 (Tuesday Afternoon) 13:00-14:50**

### **Food Safety Session**

**Session Leaders : Kazutaka Yamamoto and Pina Fratamico**

13:00-13:15	<b>The estimation of bacterial injury level under high-salt stress conditions by real-time PCR</b>	67
	<u>Yukie Hosotani</u> , Fia Noviyanti, Yasuhiro Inatsu, and Susumu Kawasaki (FRI, NARO)	
13:15-13:30	<b>Overview of the USDA Food Safety Research at Produce Safety and Microbiology Research Unit</b>	69
	<u>Vivian C. H. Wu</u> (USDA-ARS-WRRC)	
13:30-13:45	<b>Biocontrol of <i>Clostridium perfringens</i> by using two types of specific endolysins</b>	71
	<u>Hirofumi Nariya</u> , Maho Okada, Eiji Tamai and Tadashi Shimamoto (Graduate School of Biosphere Science, Hiroshima University)	
13:45-14:00	<b>Rapid and potentially portable detection and quantification technologies for foodborne pathogens</b>	73
	<u>Andrew Gehring</u> , Cheryl Armstrong, Joseph Capobianco, Yiping He, George Paoli and Pina Fratamico (USDA-ARS-ERRC)	
14:00-14:15	<b>Life style of <i>Listeria monocytogenes</i> in Japanese farm</b>	75
	<u>Nobuyuki Kijima</u> ( IVFS, NARO)	
14:15-14:30	<b>Antimicrobial resistance associated with the poultry production environment</b>	77
	<u>Kimberly Cook</u> (USDA-ARS-RRC)	
14:30-14:45	<b>Roundup</b>	
14:45-14:50	<b>Closing Remark</b>	

## November 15 (Wednesday)

### Study Tour

- 8:00 Leaving Hotel Mielparque-Hiroshima
- 10:00-12:00 **Head Office, Satake Corporation**  
2-30 Saijo Nishihonmachi, Higashi-Hiroshima, Hiroshima  
<http://www.satake-group.com/>
- 12:30-13:30** **Lunch**
- 13:50-15:00 **National Research Institute of Brewing (NRIB)**  
3-7-1 Kagamiyama, Higashihiroshima, Hiroshima  
<http://www.nrib.go.jp/English/index.htm>
- 17:00 Bus No.1 Arriving at Hiroshima Airport
- 16:00 Bus No.2 Arriving at Higashi-Hiroshima Station