Editor’s Note
I apologize for the delay in getting this newsletter out for the month of August. I was at the International Association for Food Protection (IAFP) annual conference, where I ironically contracted food poisoning during my stay. Regardless, I have included summaries and notes to some of the IAFP sessions I went to. Several sessions occurred simultaneously at IAFP so I was not able to attend all the talks that I wanted to. Because the conference topics were so diverse and there was not much on seafood specifically, this newsletter is going to be all over the place... Enjoy.

~Virginia

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A. Professional Development Group (PDG)

PDGs are sectioned into different topics that may apply to food protection. There are 24 PDGs that exist at IAFP, which all meet the Sunday before the conference to discuss current topics and potential symposium ideas for the next IAFP conference.

Viral and Parasitic Foodborne Disease PDG

1. US FDA is doing a shellfish risk assessment and looking into viruses associated with shellfish. The risk assessment will hopefully be ready in 2017.

2. The $25 million USDA grant that has funded the NoroCORE project, which researches norovirus and tries to reduce its burden, will expire in May 2017. Since 2011, the group has published over 200 papers on the virus. The information has been shared with the Interstate Shellfish Sanitation Conference (ISSC).

3. Receptors in oyster guts bind to norovirus very readily, and make the virus difficult to get ejected. Tried looking for reference and found the following:
   http://www.ncbi.nlm.nih.gov/pmc/articles/mid/NIHMS80557/
4. There was talk in the room as to how hand sanitizers do not work against norovirus, and that water treatment facilities do not kill or get rid of norovirus.

**Seafood Safety and Quality PDG**

Ideas for 2017 IAFP symposium included:

- Seafood fraud and impacts on food safety
- 20 year anniversary of seafood HACCP
- *Vibrio parahaemolyticus* and *V. vulnificus* and sustainability. New virulent *V. parahaemolyticus* strain has been emerging in NE America.

**B. Microbiology**

**New Perspectives on Norovirus**

Robert Atmar’s lab at Baylor College of Medicine is the first to have successfully replicated a human norovirus. Mature growth factors and a replicate mini-gut was used.

**Viable But Non-Culturable (VBNC) Bacteria**

VBNC bacteria are bacteria that enter a state of low metabolic activity and do not divide under stressful conditions, but are still alive and can be recovered using serious enrichment.

VBNC *Vibrio* spp. in winter oysters were also found to be resuscitated and continue to grow with the aid of quorum sensing. In this case, viable *Vibrio* spp. was added around VBNC *Vibrio* spp., which were “told” via quorum sensing that it’s a great day and that the environment is awesome and to start replicating.

Most enrichment media has hydrogen peroxide which is broken down when viable bacteria produce catalase. However, un-resuscitated VBNC do not produce catalase, so will die upon contact before given the chance to be resuscitated. Counts with this enrichment media will not take into account VBNC, which can cause frequent false negatives.

Sanitizers and other interventions can induce VBNC state in some microbes.

**C. Control and Design**

**Pulsed Light**

Pulsed light (PL) is the use of pulses of non-coherent light over a range of wavelengths.

In food application, proteins usually absorb PL and do not allow extra PL from affecting nearby pathogens.

Cells on smooth surfaces such as stainless steel are often clustered due to a higher hydrophobicity. Because of the clustered
arrangement, PL has a difficult time affecting those cells in the middle.

Disinfection of packages with PL is possible as long as the package is UV penetrable.

Thin layers, clear liquids, and/or turbidity can change effectiveness of the PL application.

**Antimicrobial Food Packaging**

Several types of food packages were discussed, which include the following:

1. Nanomaterials: unknown regulatory status; precise mixing is required.

2. Ethicap sachet: product needs to be rinsed because there is an ethanol odor.

3. Chlorine dioxide sachet: high flora counts on product where sachet was not touching; lots of work has been done on produce; no residual smell; *Salmonella* spp., yeast, and mold on berries were reduced by 0.5 to 1.5 log units with sachet application.

4. Wasauro sachet: mustard oil extract; release rate is 3-6 hours so not bactericidal or long term.


6. Nisin containing contact: cellulose based coating; used as an interleaf between deli meat slices; if you want to make it a food additive or GRAS, then kinetics information must be obtained to show how much it travels into the meat.

**How Do I Validate That? Assuring Credibility of Non-Thermal and Novel Thermal Controls for Microbiological Hazards**

Plasma is the fourth state of matter which is generated after an energy source (i.e.: electricity, microwave, etc.) is applied to a carrier gas (i.e.: air, pure gas). Plasma must be used immediately after generated or else it will convert back to a gas.

It is easier to create plasma using lower atmospheric pressure or by moving electrodes closer together, but the type of electrodes can produce dangers such as ozone or the ~45,000 volts.

Have been used to treat seed, but ends up germinating them and also produces nitrous oxide as by-product.

**Hygienic Equipment Design**

Speaker provided a reference to Food Safety Magazine’s March 2003 article on equipment design which can be found here:

Tips included observing wash down, and making sure equipment that can be taken down to be taken down.

Cable detail is a tough part because it has to withstand a wide range of pHs.

Image of a fully exposed motor with no cover and no protection was shown. Apparently the lack of disassembly needed and the COP (no cover) made it easy to clean. Who would have known!

D. Allergen Control

Several references were given during the presentation to help guide attendees on how to reduce allergens in the food facility. The following two white papers require a subscription to access, but shoot me an email and I can forward over the papers.


Jackson, 2008. Cleaning and other control and validation strategies to prevent allergen cross-contact in food processing operations.

The University of Nebraska also has provided a food processor plan which can be found here: http://www.foodallergy.org/file/food-processor-plan.pdf

There is also information on allergen thresholds that explain minimum dosages of allergens required to cause a reaction, which can be found here: http://www.fda.gov/downloads/Food/IngredientsPackagingLabeling/UCM192048.pdf

Methods of dry cleaning (i.e.: sweeping, brushing, scraping, vacuuming) may not be the greatest form of cleaning since particles can get blown into the air.

Cleaning to visual clean was said to be effective at getting rid of allergens.

E. Regulation

After sitting in on a FSMA session for two and a half hours, I realized I had heard it before.

I did find the last part with Robert Brackett, Katy Swanson, and Jenny Scott to be very interesting since they REPEATEDLY mentioned that the FSPCA PCQI course was not required as long as the QI has career experience (which may include generating HACCP plans). When I asked them if written justification is required to state why an individual is a QI, Jenny Scott replied that written documentation would imply that the FDA has criteria on what constitutes a
QI, which FDA does not. Therefore, FDA will gauge a QI’s abilities by the comprehensiveness of their Food Safety Plan.

When I asked them if they will place a cap on how much PCQI courses cost, they replied ‘no’, and that information is essentially the same in every FSPCA PCQI course regardless of price. However, there will be a price cap on those online courses that will be offered in the future.

**F. Others**

*We Are What We Eat*

Fiber deprived microbiota in your lower digestive system contributed to a thinner mucus (colonic) layer.

Enzymes were also lower in fiber-free diets.

*Citrobacter rodentium*, a mucosal pathogen was able to cause high pathogenicity in fiber-free diet colons, because no mucus layer was there to stop or slow down pathogen effects.

*Food Safety Concerns and Testing Challenges in the Emerging Cannabis Products Market*

Upon realizing that they were not handing out “special” brownies, I immediately left this session. Just kidding, I already had a stash in my purse. HA! Just thought you deserved a chuckle for reading all the way down to this point.

But seriously, this session showed me how completely unprepared the edibles industry is, as you will also notice in the following notes.

If you did not know already, solvents are oftentimes used to help extract components from marijuana to help make edibles. Surprise!

Heavy metals were noted, in addition to yeast and mold, as something that is very important to screen for before using the extract.

Because of the type of environment growers use, they are not completely devoid of using pesticides. However, pesticides are difficult to screen for because it is an expensive process and expert technicians are needed.

In addition, this industry needs proficiency testing, reference standards, validated processes, and preferably ISO-certified trained technicians.

And finally, there is no federally regulated pharmacopeia on quality control standards, so are growers even thinking about quality control?!

It is clear that this industry has a lot of challenges to overcome. Hopefully, they will be able to before someone gets hurt.
Nationwide Courses on Food Safety and Regulatory Affairs*

**Webinar (FREE)**

*Food Defense: How to Comply with FSMA’s New Intentional Adulteration Rule*
*When*: August 17, 2016 at 10AM (PT)
*http://news.alchemysystems.com/food-defense-webinar-registration?hsCtaTracking=93135382-c1c3-4825-a53a-089d1689c538%7Ccf327291-c208-4825-b92f-84677202a59d*

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**Course**

*Environmental Monitoring for Manufacturing Plants*
*When*: August 30-31, 2016
*Location*: DoubleTree by Hilton Seattle Airport, 18740 International Blvd., Seattle, WA
*Cost*: $795
*http://www.cvent.com/events/environmental-monitoring-for-manufacturing-plants/event-summary-5d680343a2a94298ab71dc90585952ca.aspx*

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**Course**

*FSPCA Preventive Controls for Human Food*
*When*: September 7-9, 2016
*Location*: LaSells Stewart Center, 875 SW 26th St., Corvallis, OR 97331
*Cost*: $625-$695

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**Course**

*Basic Seafood HACCP (3-day Course)*
*When*: September 22, 2016
*Location*: Lakewood, CA
*Cost*: $649
*Contact*: David Rosson
Phone: (562) 292-0555
Email:drosson@lbcc.edu

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**Course**

*Better Process Controls School (BPCS)*
*When*: September 27-29, 2016
*Location*: Holiday Inn Downtown, 141 N. 9th St., Lincoln, NE 68508
*Cost*: $650

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**Course**

*Smoked Seafood School*
*When*: October 12-14, 2016
*Location*: UAF Kodiak Seafood and Marine Science Center, 118 Trident Way, Kodiak, AK
*Cost*: $270
*https://seagrant.uaf.edu/map/workshops/2016/smoking-seafood/
Course

Advanced Clean in Place (CIP)

When: October 25-26, 2016
Location: The Ohio State University, Columbus, OH 43210
Cost: $825

http://foodindustries.osu.edu/events/advanced-clean-place-cip

*Course information that is being sent to you via this newsletter may not necessarily be hosted by Seafood Products Association (SPA). Nor is SPA endorsing any of the companies supplying this information.