

Gather & Grow: Food Safety



Schedule

Wk 1 – Financial Foundations

Wk 2 – Understanding Your Product and Consumer

Wk 3 – Store Visit: Getting on the Shelf & Staying on the Shelf

Wk 4 – Food Safety

Wk 5 – Distribution

Wk 6 – Packaging

Wk 7 – Co-Manufacturing

Wk 8 – Tour/Site Visit

Wk 9 – Access to Capital



Housekeeping/Reminders

- **Reminder:** Please turn on your cameras so we can see your beautiful faces. 😊
- We will sign up for Office Hours at the end of class
- Office Hours – Our experts are volunteers with day jobs, let's be respectful of their time

Bethany Richardson

General Mills

Current Role: Food Safety & Quality Manager,
Geneva Plant

Education: Clemson University (B.S Food Science),
University of Illinois (M.S Food Science- Flavor
Chemistry)

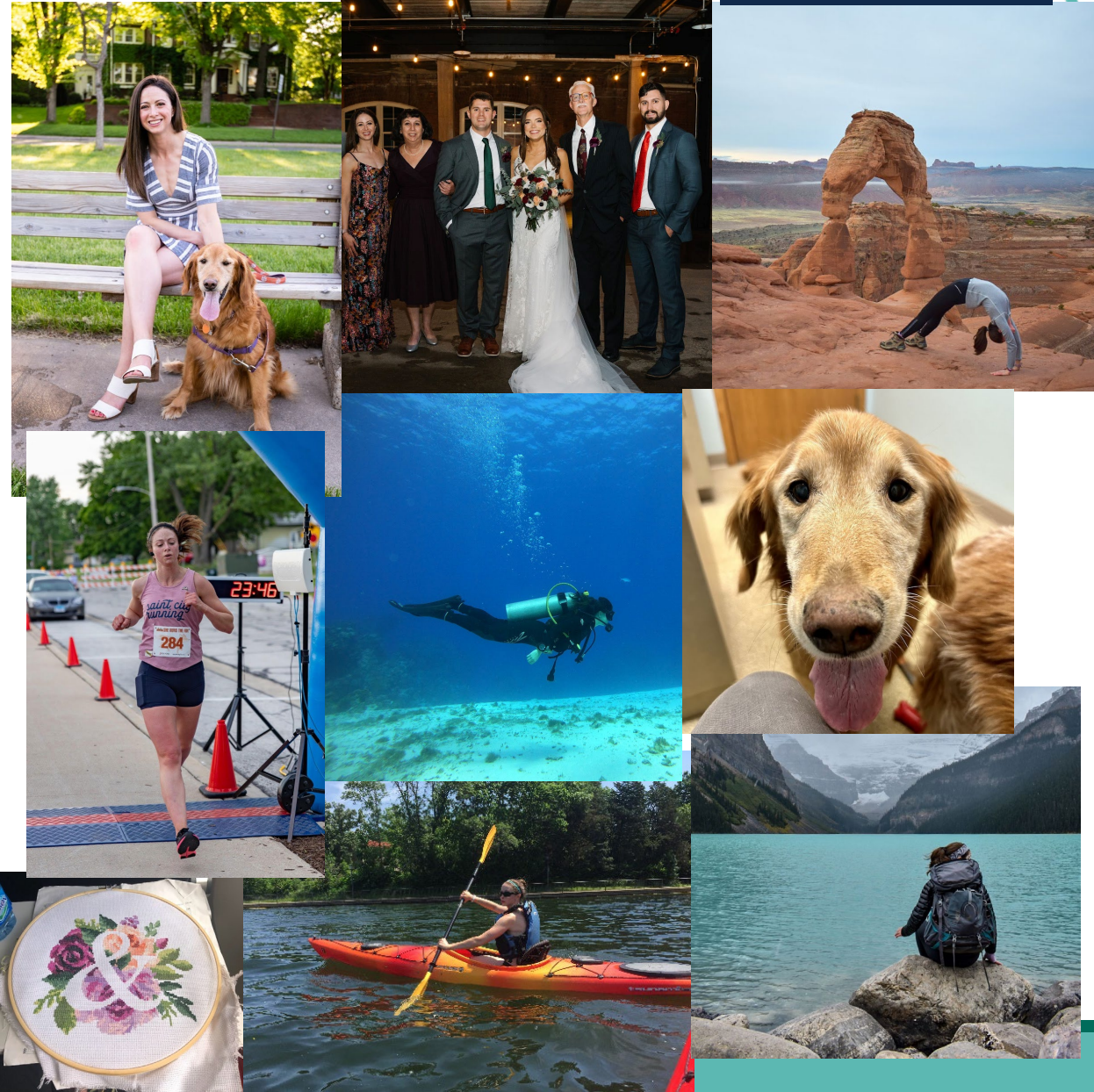
Where you're from: Collierville, TN

Family members: Two younger brothers + sister-in-law;
rescue golden retriever Carlie (14)

Hobbies: running, weightlifting, traveling, scuba diving,
hiking, snowshoeing, kayaking, cross-stitching,
Clemson football, cooking/baking

CLEMSON

UNIVERSITY OF
ILLINOIS
URBANA-CHAMPAIGN





Instructor Bio



Tim Heinemann, Cargill
Senior Specialist Food Safety and Innovation

Work background:

I lead the food safety programs at Cargill's Plymouth and Savage R&D locations.

Hobbies/Interests:

Gardening, Baking, Hunting and Fishing

I live in Savage MN with my wife Anita and kids Emma (16) and Charlie (14)



Why Food Safety?

What's at stake?

- Customers & People
- Legal Requirements
- Brand Protection



Pulse Check: How are you keeping your products safe?



Answer in the chat

- A) Using Department of Health guidelines
- B) Hand washing
- C) Ingredient Labeling
- D) Other – **write in the chat**



Today's Agenda

1. Types of food safety hazards
2. Risks for YOUR product
3. Sources of hazards
4. Process
5. Labelling and Allergens
6. Distribution and Transportation
7. Recap & Questions
8. Sign up for Office Hours



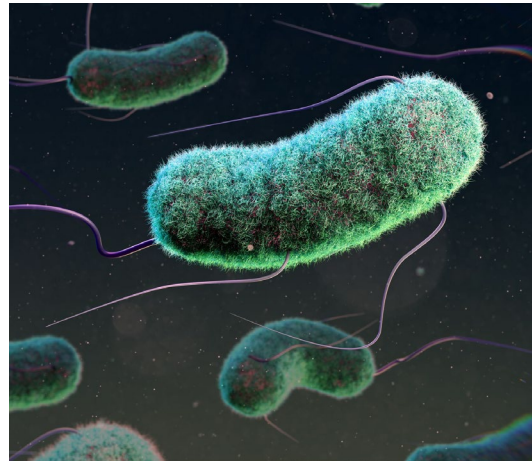
Food Safety Hazards

The hazards found in food can be grouped into 3 major categories:



Chemical –

- Examples – Pesticides, Mercury, equipment lubricants



Microbiological –

- Examples – Salmonella, E. Coli, Listeria



Physical –

- Examples – broken glass, metal shavings, brittle plastic shards.



Uncovering the risks for YOUR product

Google “Recall” + your product

- What has caused recalls for the product?
- What has caused recalls for the primary ingredients?

Research similar products

- How are they packaged?
- What information is on the label?
- Is this material commonly sold in the USA?

Identify common problems and plan on avoiding them!



Uncovering the risks for YOUR product

Let's walk through an example....



Hazard Sources

Two major sources of hazards:



Ingredients



Production Facility



Ingredient Hazards



Food safety hazards can come directly from the ingredients used. Some examples include:

- Microbiological – Salmonella may be present in raw chicken and eggs
- Chemical – Growth of mold on grain can cause formation of harmful toxins (mycotoxins)
- Physical – Dry beans may have rocks or stones present from harvest

Guides are available to help identify risks by food category

- [FDA - Appendix 1: Known or Reasonably Foreseeable Hazards \(“Potential Hazards”\)](#) - Publication listing potential hazards associated with food types.



Ingredient Hazards (cont'd)



Food Fraud – risk of suppliers making false claims or substituting materials to make more money

Manage ingredient risks by:

- Purchasing ingredients that are intended for food use.
- Purchasing ingredients from a reputable supplier.
- Developing a plan to control risks that come with ingredients



Production Facility Hazards

Your food production facility needs to meet local licensing requirements

- “Cottage” produced food needs to be labeled as such

Cross-Contamination – Term for unintentionally getting other materials in your food product.

- What else is made in the facility?
- Is it FOOD only?
- Is there a plan to keep RAW ingredients separate from COOKED product?



Production Facility Hazards (cont'd)



ALLERGENS – Peanuts, Tree Nuts, Soy, Wheat, Milk, Eggs, Fish, Crustacean Shellfish and Sesame

- Need a plan to keep allergens out of non-allergenic foods!

Contract Manufacturers – Ask to see the food safety program for the facility!



Production Facility Hazards – Sanitation / Hygiene



Red Flags!

- Dirty hands or tools
- Cross-contamination (raw meat touching cooked food)
- Pests (insects, rodents)

Basic Expectations:

- **Wash hands** before handling food
- Wear **clean clothing**, hairnets, and gloves
- Stay home if you are **sick**
- Clean all **surfaces**, tools, and equipment **daily**
- Use **approved cleaning chemicals**
- Keep floors, walls, and ceilings **dry and clean**

Have a cleaning schedule and document cleaning activities!



Example: Hazard Sources



Discussion:

What are some of the hazards for wheat flour?



5-min Break / Worksheet

05:00

4 Access PARTNERS

4AP Food Academy

Food Safety **B BRONZE**

Preparation

Have you refined and finalized your formula?

Can you manufacture consistent product?

Are you established as a legitimate food business?

Possible Next Steps:

Make progress on the following:

- ☐ Formula
- ☐ Basic process instructions and pass/fail criteria
- ☐ Shelf life determined
- ☐ Process authority letter
- ☐ Licenses
- ☐ Nutritional Facts Panel (NFP)

Notes:

Manufacturing Options

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Reflect and Begin to fill out your worksheet

Understand Your Process

Prepare for HACCP



- ① Lists the steps involved in making your food.
- ② List the hazards associated with your ingredients.
- ③ Does a processing step manage the identified hazards from ingredients?

Example: E. Coli may be present in wheat flour. The heat involved in baking bread will 'kill' any E. Coli present.

④ Critical Control Point (CCP)

Processing steps that are necessary to control a significant risk from an ingredient

Understand Your Process



- 1 Lists the steps involved in making your food.

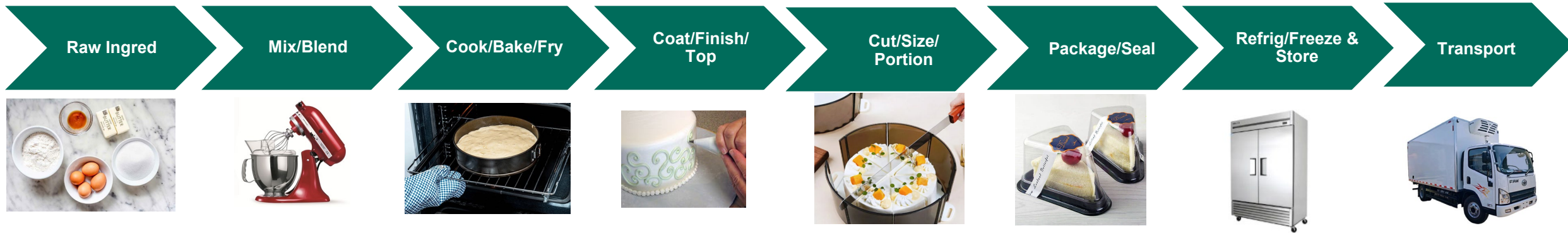


Individually-packaged Cake Product



Understand Your Process

1 Lists the steps involved in making your food.





Understand Your Process

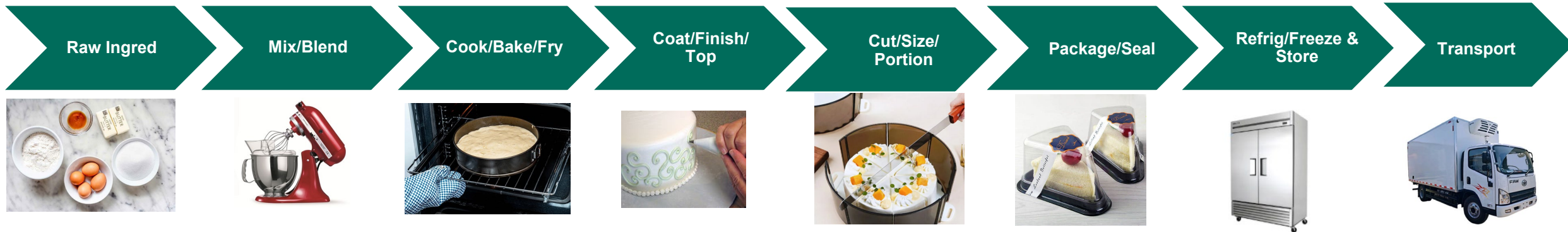
- ② List the hazards associated with your ingredients.





Understand Your Process

③ Does a processing step manage the identified hazards from ingredients?

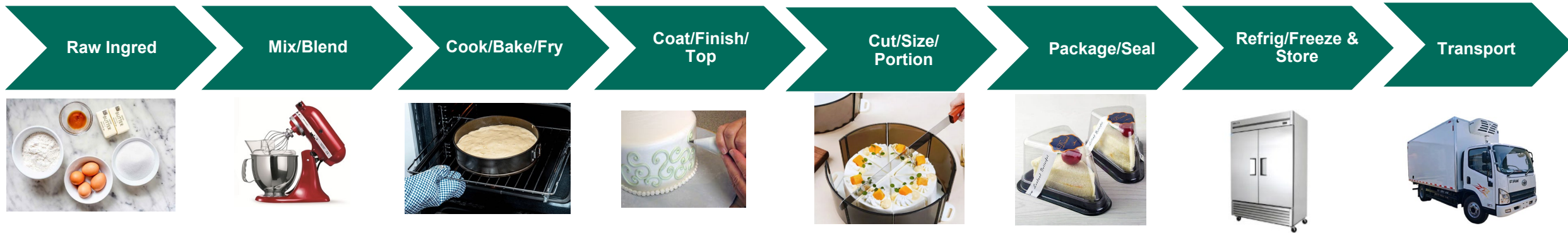




Understand Your Process

4 Critical Control Point (CCP)

Processing steps that are necessary to control a significant risk from an ingredient





Labeling and Allergens

Labels must accurately describe the food product.

- The most frequent cause of food recalls is mis-labeling.
- Make sure ingredients are listed using common names.

Any allergens in the food must be labeled. Example: “Contains SOY”

- Peanuts, Tree Nuts, Soy, Wheat, Milk, Eggs, Fish, Crustacean Shellfish and Sesame require labeling in USA

Precautionary Labeling - "MAY CONTAIN" or "PRODUCED IN A FACILITY"...





Packaging Risks

Are there Foreign Material risks associated with the packaging

- If packaging in glass, how are chips and breakage being managed?
- Soft plastic film mixed in the product won't hurt a customer but will cause complaints and refund requests.

Choose safe and suitable packaging materials that are appropriate for food contact.



Storage and Transport

Implement effective temperature control measures.

- Have a plan to keep refrigerated or frozen product cold.

Monitor storage conditions for safety.

- Have a plan for tracking temperature of refrigerated product.

Ensure proper handling during transport.

Ensure packaging integrity during transport.

- Packaging that has torn, crumpled or otherwise degraded may not be sellable.



Remember...

- Ingredients and Processing steps are your source of hazards
- Double check your labels (4AP experts can help with this)
- Compare against similar products
- Stay on top of the fundamentals – Hygiene, Sanitation, etc...



Office Hours