

# Practical Outcomes of Training

Ruth L. Petran, PhD, CFS  
VP, RD&E Food Safety/Public Health at Ecolab  
VP, IAFP Executive Board



# DISCUSSION OVERVIEW

- IAFP Overview
- Foodborne Illness concerns are significant
  - Global data
  - Review of contributing factors
- Role of targeted training
- Maximizing the impact



**Our mission is to provide food safety professionals worldwide with a forum to exchange information on protecting the food supply**

# IAFP Publications

The world's leading  
refereed publication for  
research articles on  
food safety and quality

*Available in print  
and online*



# IAFP Publications

**Bi-monthly  
publication with  
peer-reviewed  
articles on applied  
research and special  
food safety features**

***Available in print  
and online***

**IAFP Membership includes  
online access**



# IAFP Publications

Electronic newsletter  
featuring Association  
updates, global news  
and resources, and  
topics of interest to  
food safety  
professionals

*Sent monthly  
to Members*

August 2019 Vol.13, No. 8 [Visit foodprotection.org](http://Visit.foodprotection.org)

## IAFP Report

International Association for Food Protection

### Louisville KENTUCKY IAFP 2019 ANNUAL MEETING · JULY 21-24

#### IAFP 2019 was a winner!

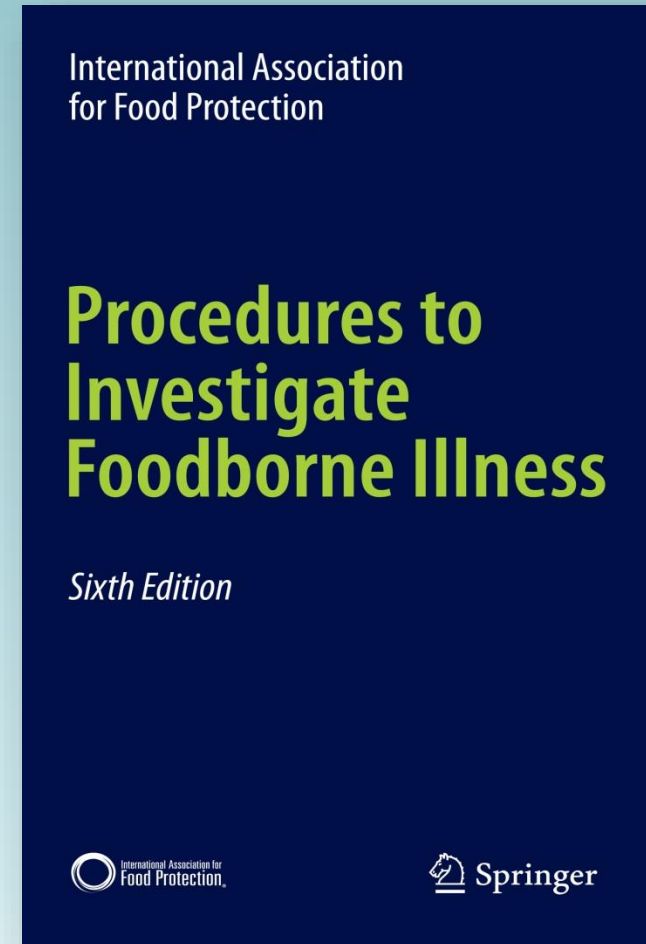
A record-breaking attendance of more than 3,800 attendees from six continents took part in this year's Annual Meeting, held July 21-24 in Louisville, Kentucky. An extensive lineup included more than 1,000 presentations; special presentations from Ivan Parkin lecturer Dr. Barbara Chamberlin and John H. Silliker lecturer Dr. Robert Tauxe; and another standing-room-only audience for the U.S. Regulatory Update on Food Safety by Mr. Frank Yiannas and Dr. Mindy Brashears. Six Pre-Meeting Workshops covering a variety of topics were well-attended on July 19 and July 20. And this year's Exhibit Hall was packed with 187 companies – including 41 new exhibitors – who showcased equipment and the latest innovations in food safety. We extend our sincere thanks and appreciation to all who attended and to those who volunteered their time and expertise before and throughout **IAFP 2019** to help us "race to the finish line!"



IAFP received more than \$29,000 in donations through the IAFP Foundation Booth at this year's Annual Meeting. Fred Weber's generous "Weber Challenge"

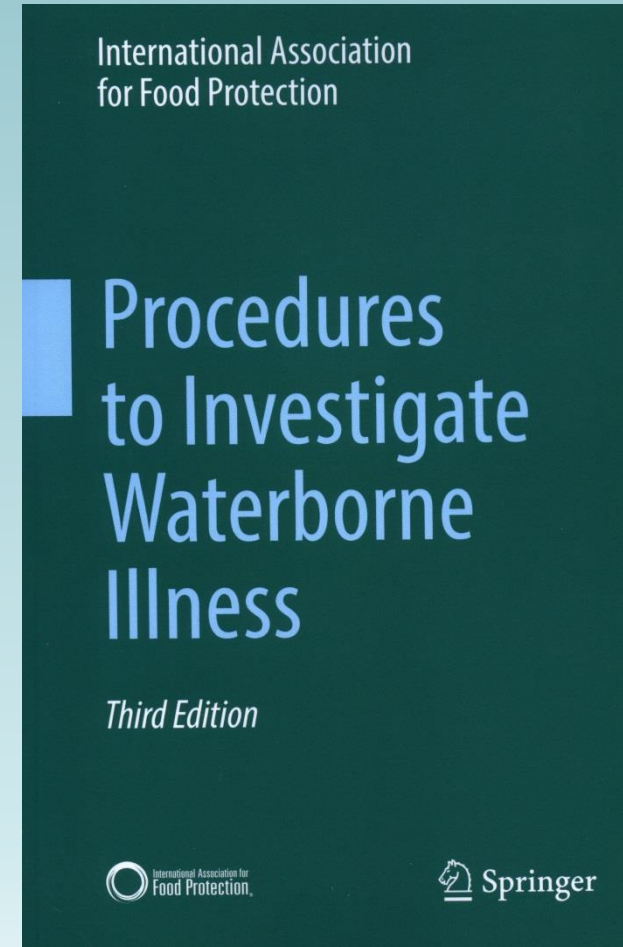
# IAFP Publications

- Invaluable guide for public health personnel
- Designed to improve the quality of outbreak investigation and disease surveillance



# IAFP Publications

- Invaluable guide for public health personnel
- Designed to improve the quality of outbreak investigation and disease surveillance



**IAFP Annual Meeting**  
*the leading food safety conference*



# What Happens at Annual Meeting?

- 80+ symposia and roundtable topics
- More than 700 technical presentations (oral, posters)
- 185+ food safety exhibits
- IAFP Business Meeting



- Committee, PDG meetings
- Free lunches, receptions
- Awards Reception & Banquet
- Silent Auction

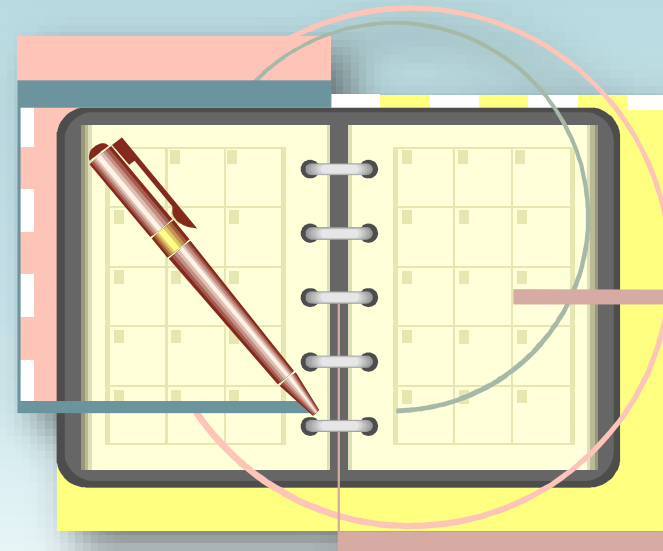
# Annual Meeting Extras



- Meeting app
- WiFi Internet access
- Coffee Breaks in Exhibit Hall
- Reception on Monday and Tuesday in Exhibit Hall
- Lunch included on Monday, Tuesday and Wednesday
- Sessions recorded, available on IAFP website for attendees

# Future IAFP Annual Meetings

- 2021, July 18–21 Phoenix, AZ
- 2022, July 31–August 3 Pittsburgh, PA
- 2023, July 16–19, Toronto, Ontario, Canada



# European and International Symposia

## *European*

- 2020 Munich, Germany
- 2019 Nantes, France
- 2018 Stockholm, Sweden
- 2017 Brussels, Belgium
- 2016 Athens, Greece



## *International*

- 2019 Asia Pacific – Hong Kong
- 2018 Latin America – Argentina
- 2016 Latin America – Mexico
- 2016 Asia Pacific – Malaysia



## Other International Conferences



**INOFOOD 2019**

**October 28 - 29, 2019  
Santiago, Chile**

## Other International Conferences



**China International  
Food Safety & Quality  
Conference + Expo**

**October 30 - 31, 2019  
Beijing, China**

## Other International Conferences



**Dubai International  
Food Safety Conference  
and  
IAFP's 6<sup>th</sup> Middle East  
Symposium on  
Food Safety**

**November 10 - 12, 2019  
Dubai, UAE**

# IAFP Executive Board 2019-2020



**President-Elect**  
***Roger Cook***  
New Zealand  
Ministry for  
Primary Industries



**Vice President**  
***Ruth Petran***  
Ecolab, Inc.



**Secretary**  
***Michelle Danyluk***  
University of Florida



**President**  
***Kali E. Kniel***  
University of  
Delaware

**Past President**  
***Tim Jackson***

Driscoll's of  
the Americas

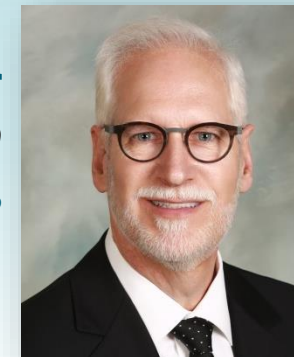


**Affiliate Council  
Chairperson**  
***Maria Ma***

Oklahoma State  
University



**Executive Director**  
***David Tharp***  
IAFP



## **Flexible Membership Plans**

### **Base Membership**

**\$55**

### **Base Membership for Students**

**\$27.50**

### **Membership with journals**

**Add to the base membership one or more of our esteemed publications:**

***Food Protection Trends, Journal of Food Protection, or JFP Online.***

**Add all three for the best value!**

# Benefits of Membership

- *IAFP Report* monthly newsletter
- *Food Protection Trends* online
- Best rates on IAFP's revered scientific journals
- Online Membership directory
- *IAFP Connect*
- Involvement in Committees and Professional Development Groups (PDGs)
- Discounted rates for:
  - Renowned IAFP Annual Meeting and international symposia
  - Educational workshops and webinars
  - Food safety booklets, Icons and other established resources

# **Service and Growth Opportunities**

## **Committees**

- **Standing Committees**
- **Special Committees**
- **Task Forces**

## **Professional Development Groups (PDGs)**

- **Diverse focus groups in 27 specialized areas**

## **Affiliate Council**

- **Delegates from 56 Affiliate organizations, with representation on IAFP Executive Board**

# Professional Development Groups (PDGs)

Advanced Molecular Analytics

Applied Laboratory Methods

Beverages and Acid/Acidified Foods

Dairy Quality & Safety

Developing Food Safety Professionals

Food Chemical Hazards/Food Allergy

Food Defense

Food Fraud

Food Hygiene & Sanitation

Food Law

Food Packaging

Food Safety Assessment, Audit  
& Inspection

Food Safety Culture

Food Safety Education

Fruit & Vegetable Safety & Quality

HACCP Utilization & Food Safety Systems

International Food Protection Issues

Low Water Activity Foods

Meat & Poultry Safety & Quality

Microbial Modelling & Risk Analysis

Pre Harvest Food Safety

Retail & Foodservice

Sanitary Equipment & Facility Design

Seafood Safety & Quality

Student

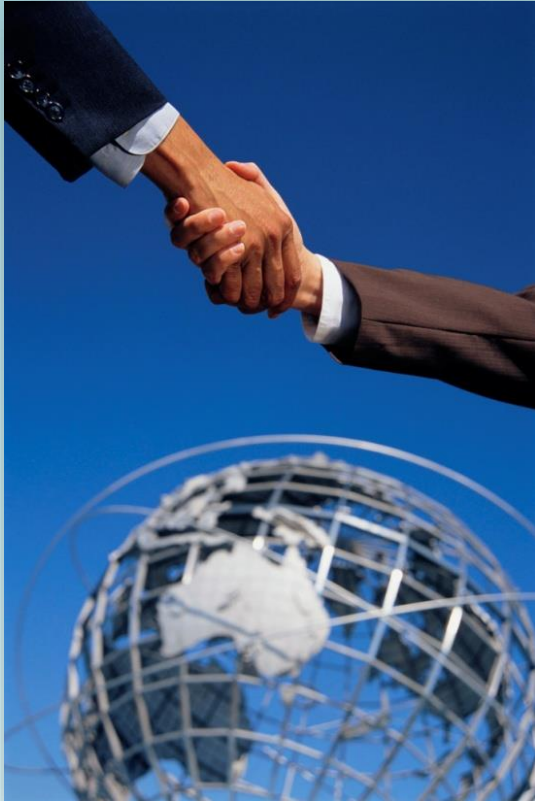
Viral & Parasitic Foodborne Disease

Water Safety & Quality



- **Exchange**
- **Inform**
- **Connect**

# MOUs and Partnerships



- **U.N. Food & Agriculture Organization (FAO)**
- **International Life Sciences Institute, North America (ILSI, NA)**
- **International Commission on the Microbiological Specifications for Food (ICMSF)**

# Recognition for Achievements

- **Black Pearl Award**
- **Awards for excellence in specific disciplines of food safety – 10**
- **Travel Award for State or Provincial Health or Agricultural Department Employees (North America) – 5**
- **Travel Award for Food Safety Professionals in a Country with a Developing Economy – 3**
- **Association honors – 4**
- **Cooperative Awards – 3**
- **Student Awards and scholarships – 21**
- **Affiliate Awards – 5**

# International Food Safety Icons

Handwashing



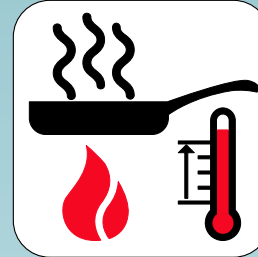
Copyright © International Association for Food Protection

Potentially Hazardous Food



Copyright © International Association for Food Protection

Cooking



Copyright © International Association for Food Protection

Do Not Work If Ill



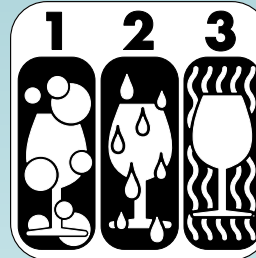
Copyright © International Association for Food Protection

Cross Contamination



Copyright © International Association for Food Protection

Wash, Rinse, and Sanitize



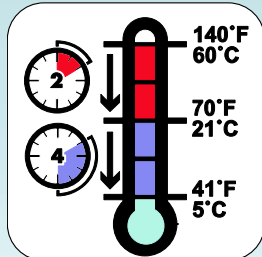
Copyright © International Association for Food Protection

No Bare Hand Contact



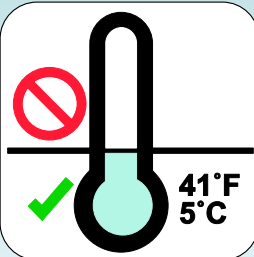
Copyright © International Association for Food Protection

Cooling



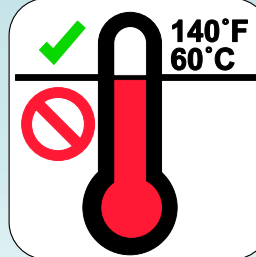
Copyright © International Association for Food Protection

Refrigeration/Cold Holding



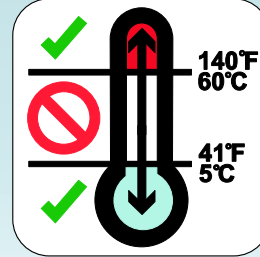
Copyright © International Association for Food Protection

Hot Holding



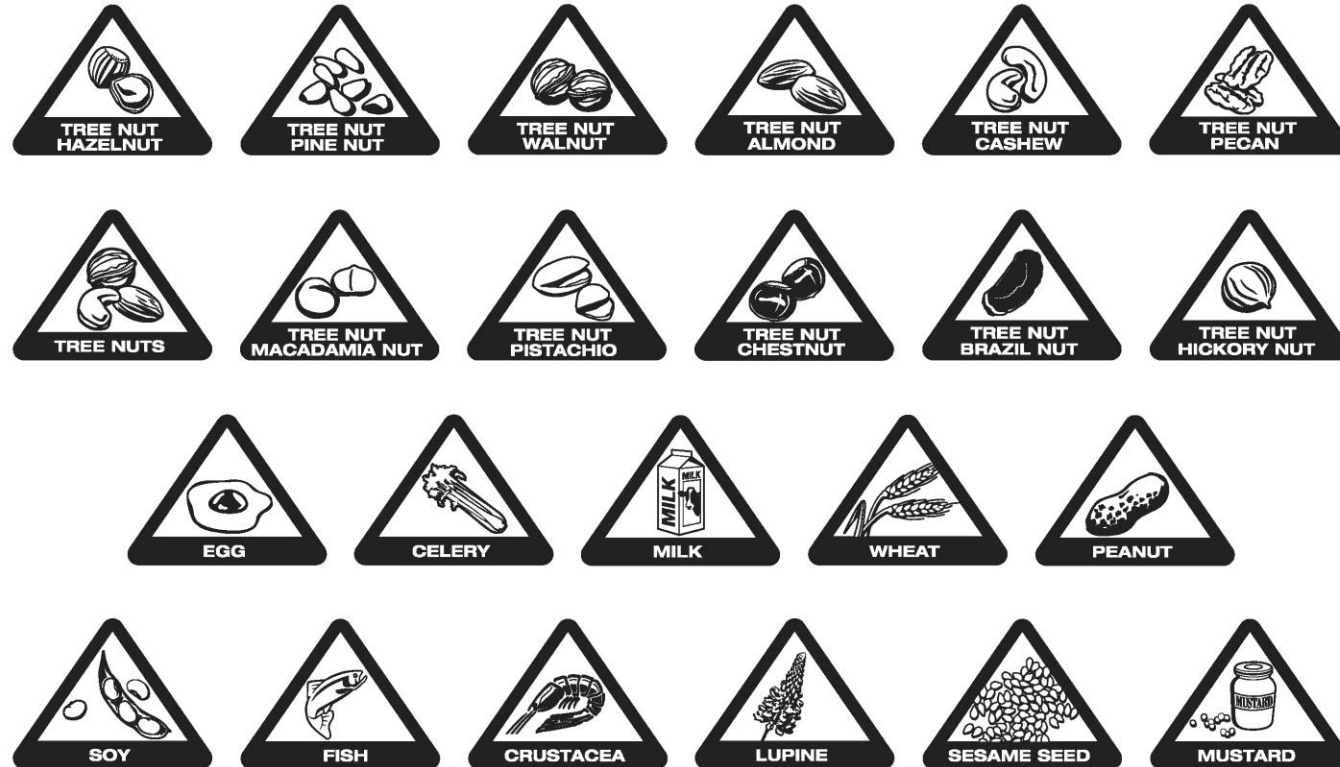
Copyright © International Association for Food Protection

Temperature Danger Zone



Copyright © International Association for Food Protection

# International Food Allergen Icons



# Affiliate Connections

## *56 Affiliates Worldwide*

- **North America – 35**
  - USA (31), Canada (4)
- **South/Latin America – 5**
  - Argentina, Brazil, Chile, Colombia, Mexico
- **Europe – 4**
  - Hungary, Portugal, Spain, UK
- **Asia – 9**
  - China, Hong Kong, Japan, Korea, Lebanon, Taiwan, Turkey, Southeast Asia, United Arab Emirates
- **Australia & Oceania – 2**
  - Australia, New Zealand
- **Africa – 1**
  - Across the continent



**Connect with food safety professionals in *your* area by joining or forming an IAFP Affiliate!**

# Benefits of IAFP Affiliation

- IAFP Executive Board Speaker and Expanded Speaker Program
- Representation on IAFP Affiliate Council and Executive Board
- Promotion of Affiliate membership and meetings in IAFP journals and Web calendar
- Affiliate networking at Annual Meeting
- Publication of Affiliate activities and accomplishments in *Affiliate View* quarterly newsletter
- Hosting IAFP meetings in your region
- Affiliation with IAFP attracts professionals to your organization



**Make it *your* association!**

**[www.foodprotection.org](http://www.foodprotection.org)**

# Our Shared Purpose

THE WORK WE DO MATTERS

Every day Ecolab makes the world  
**cleaner, safer and healthier**

**Protecting people  
and vital resources**



CLEAN  
WATER



SAFE  
FOOD



ABUNDANT  
ENERGY



HEALTHY  
ENVIRONMENTS



# FOODBORNE ILLNESS ANNUAL ESTIMATES

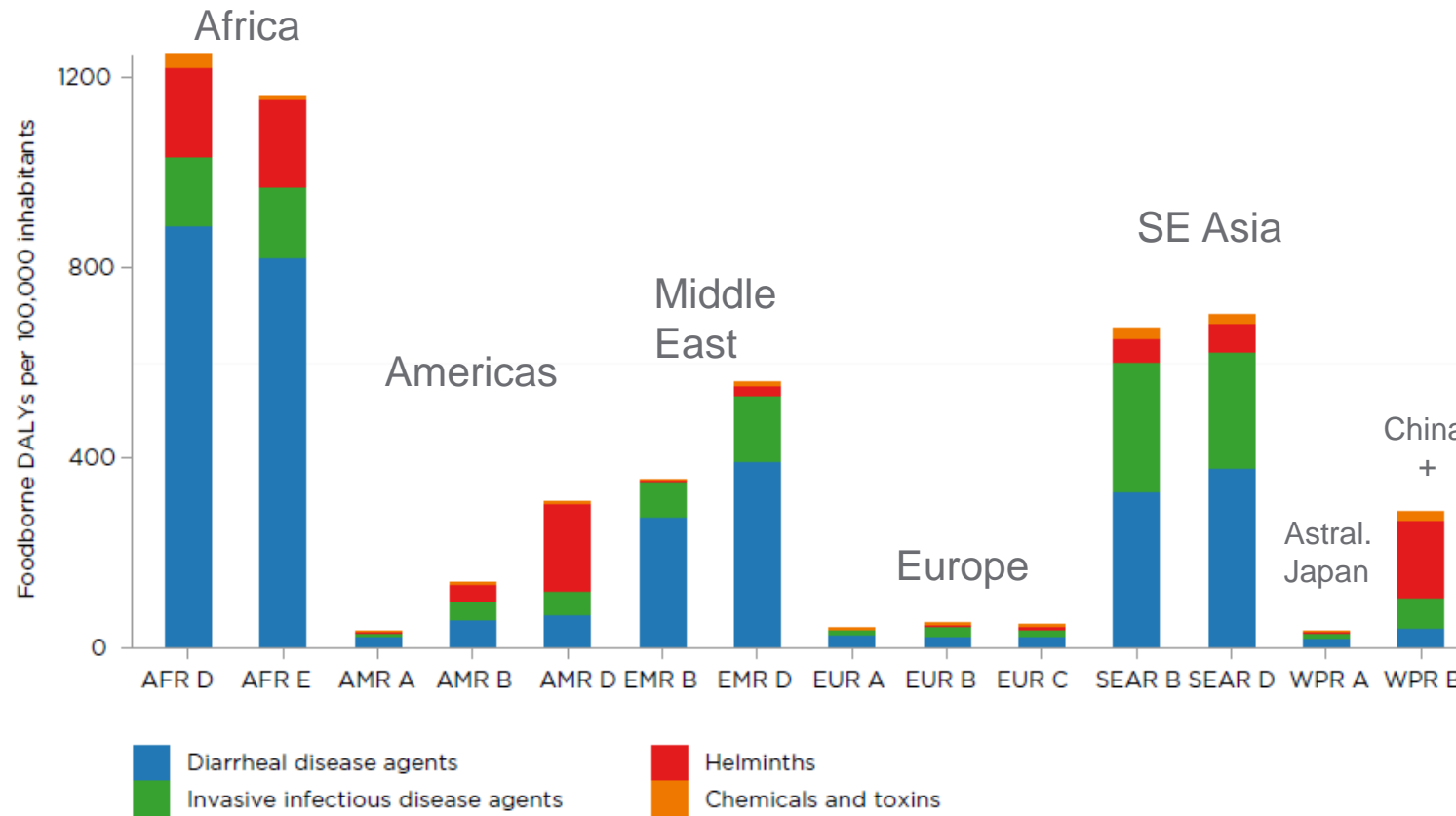


Global foodborne illness estimate: 600 million cases and 420,000 deaths

# GLOBAL FOODBORNE ILLNESS DATA SPURS DEVELOPMENT OF TARGETED ACTIONS

- WHO has estimated the global burden of diseases from foodborne illnesses
  - 31 agents (bacteria, toxins, parasites, chemicals)
- African region has highest disease burden, then SE Asia
- Global Variability in What Causes Illness
  - Developed World - Norovirus, *Campylobacter*, *E. coli* and *Salmonella*
  - Developing World expanded to also include hazards from chemicals
- Agents responsible for most deaths
  - Typhoidal and non typhoidal *Salmonella*
  - Enteropathogenic *E. coli*
  - Norovirus
- 40% of affected people suffering were < 5 years old

# GLOBAL FOODBORNE ILLNESS DATA MUST SPUR DEVELOPMENT OF TARGETED ACTIONS



## Global Variability in What Causes Illness

- Developed World - Norovirus, *Campylobacter*, *E. coli* and *Salmonella*
- Developing World expanded to also include hazards from chemicals

- Agents responsible for most deaths – *Salmonella*, *E. coli*, Norovirus
- 40% of affected people suffering were < 5 years old

# CANADA: ESTIMATED **FOODBORNE ILLNESSES**



## FOOD-RELATED ILLNESSES, HOSPITALIZATIONS & DEATHS IN CANADA



**1 IN 8 PEOPLE**



(4 MILLION CANADIANS)  
GET SICK EACH YEAR FROM  
**CONTAMINATED FOOD.**

**OVER 11,500  
HOSPITALIZATIONS  
AND 240 DEATHS  
OCCUR EACH YEAR  
DUE TO FOOD-RELATED ILLNESSES.**

\* Includes both estimates for 30 foodborne pathogens and unknown causes of acute gastrointestinal illness.

## THE COMMON CULPRITS IN CANADA ARE:

\*Estimated number each year

### NOROVIRUS

The leading cause of  
food-borne illnesses  
and hospitalizations.



Illnesses: **1 million**  
Hospitalizations: **1,180**  
Deaths: **21**

### LISTERIA

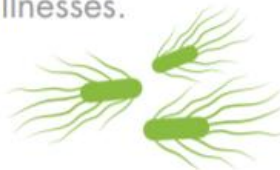
The leading cause  
of deaths related to  
food-borne illness  
each year.



Illnesses: **178**  
Hospitalizations: **150**  
Deaths: **35**

### SALMONELLA

Contributes to 1 in  
4 hospitalizations  
of all food-borne  
illnesses.



Illnesses: **88,000**  
Hospitalizations: **925**  
Deaths: **17**

### E. COLI O157

One of the top  
food-borne bacteria  
causing severe illness.



Illnesses: **12,800**  
Hospitalizations: **245**  
Deaths: **8**

### CAMPYLOBACTER

The third leading  
cause of food-borne  
illnesses and  
hospitalizations.



Illnesses: **145,000**  
Hospitalizations: **565**  
Deaths: **5**

# THE LANDSCAPE

Labor market  
tightening

IMPACT



## Difficult to find employees

- Get to on-the-job competence quickly
- Training becoming increasingly critical



“Gig economy”

## Even higher turnover

- Lose valuable employee knowledge
- Must react to frequent last-minute scheduling



Evolving technology and  
unique work environment

## Complexity in training

- Shift in learner requirements
- Mistakes are costly



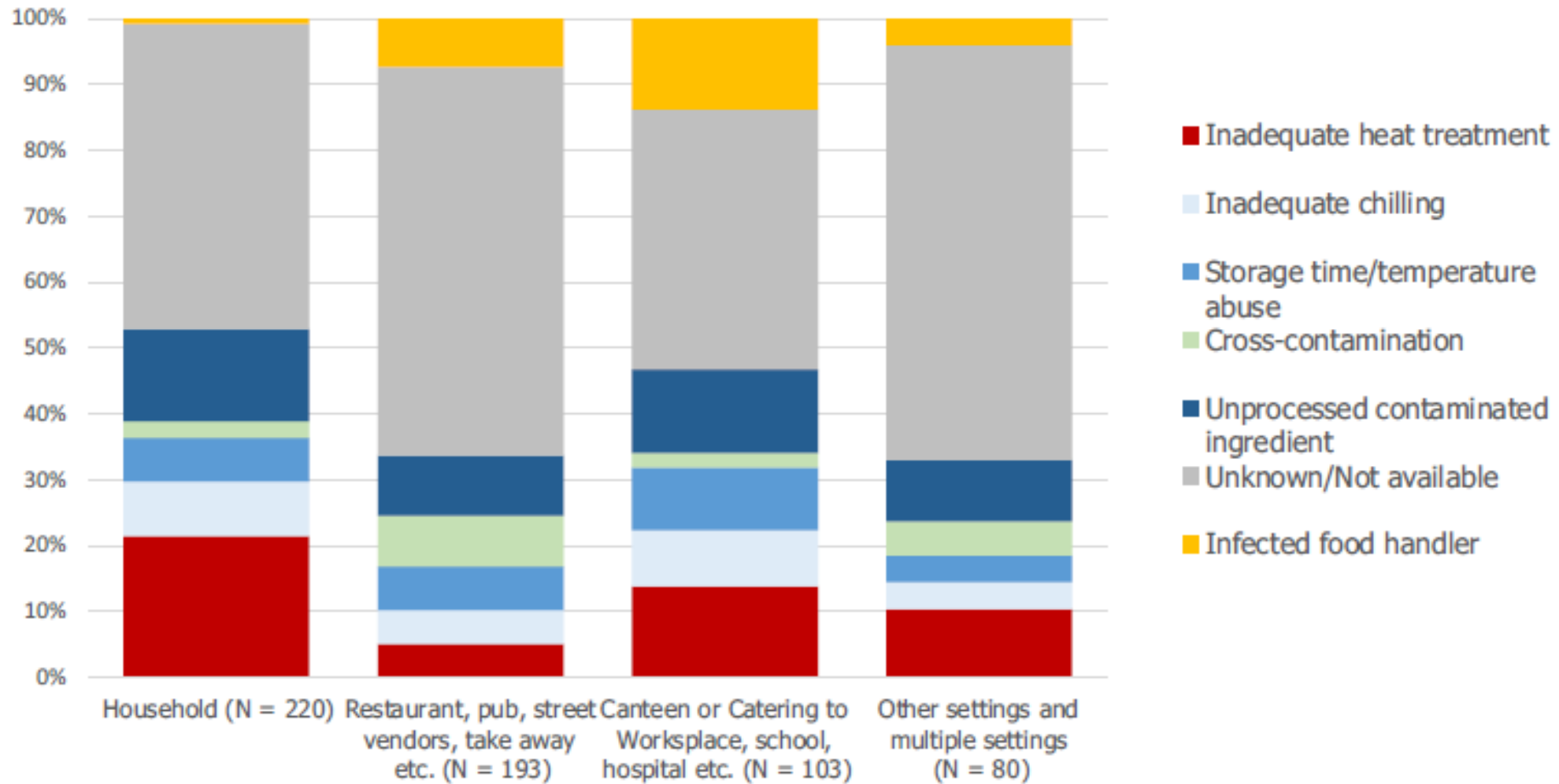
# CAN YOU EFFECTIVELY TARGET TRAINING TO RESPOND TO THE PROBLEM?

## Key Considerations

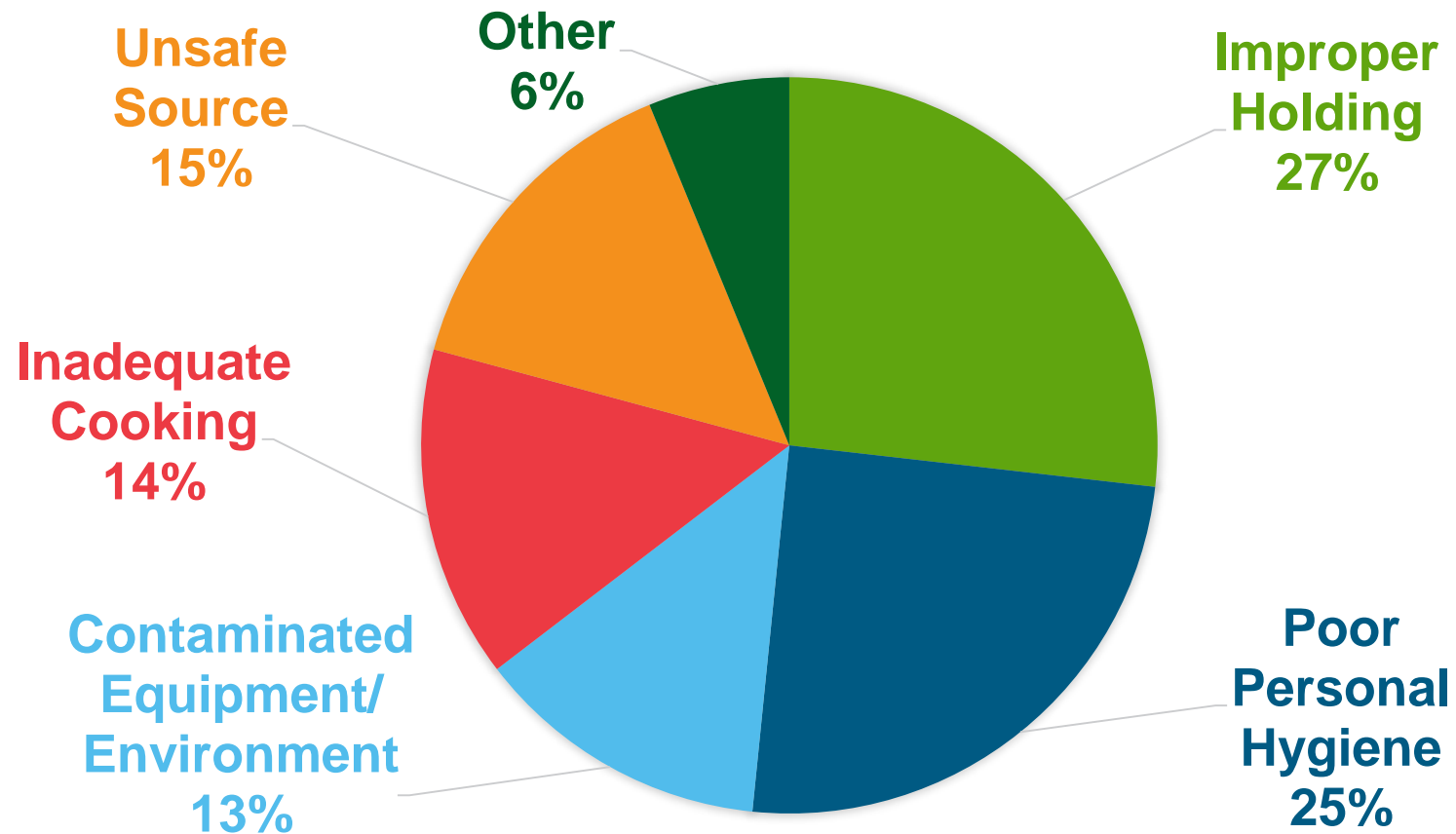
1. What subjects to train on?
2. Who to train?
3. How to train?
4. How to verify effectiveness of efforts?

What subjects to train on?

# CONTRIBUTORY FACTORS IN STRONG-EVIDENCE EUROPEAN OUTBREAKS



# CONTRIBUTING FACTORS TO FOODBORNE ILLNESS



Source: CDC 2018 [https://www.cdc.gov/fdoss/pdf/2016\\_FoodBorneOutbreaks\\_508.pdf](https://www.cdc.gov/fdoss/pdf/2016_FoodBorneOutbreaks_508.pdf)

# TOP 5 UNDERLYING CONTAMINATION CAUSES

CHINA 1999 - 2010

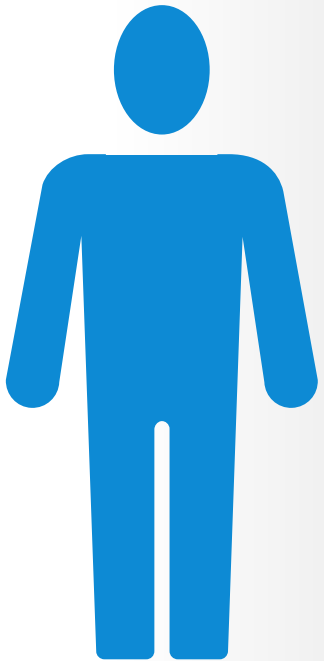
- Unhygienic practice – 56.6%
- Ingestion of expired or decayed food – 8.6%
- Misuse of toxic substances in food – 6.7%
- Other regulatory violations – 6.1%
- Inadequate cooking – 4.7%

Source: Xue and Zhang 2013 Food Control 30 (2013):311-317

# Who to train?

# THINK ABOUT TRAINING DIFFERENTLY

## Deskless Worker



Deliver and reinforce  
consistent training without  
interrupting regular  
workflow.

## Special Considerations

On the move



Work non-  
traditional hours



Work  
independently



Limited time



Need access to  
information anytime,  
anywhere



# How to train?

# EMBRACE MODERN LEARNING

How learners are learning:



Short spurts



Anytime,  
anywhere



When it's  
relevant



**What would you do?**

# ALIGN TRAINING TO THE WAY LEARNING HAPPENS AT WORK

## Learn by doing

ACTION



### Fit learning into flow of work

- Look for minutes, not hours
- Provide continuous learning opportunities

**70%** of adult learning takes place through on-the-job experience

## Informal mentoring

### Embrace social learning

- Conversation / feedback
- Coaching or shadowing
- Peer-to-peer collaboration

**20%** happens naturally through interaction or exposure



## Formal learning

### Combine traditional and digital

- Traditional, event-based training alone may not meet needs
- Knowledge upon which informal learning is built

**Only 10%** of learning takes place through formal learning

# TRAIN THROUGHOUT CONTINUOUS LEARNING EXPERIENCE

---

1

**Train for best outcomes** —  
focus on business and  
individual value

---

2

**Bridge gap** between  
learning and applying  
knowledge

---

3

**Sustain** on-the-job  
competence

Find partners who support your  
**training strategy**



Put the individual at the center

# TRAIN FOR BEST POSSIBLE OUTCOMES



Design  
for **self-directed**  
and specialized  
learning

Offer  
**visual, short and  
relevant**  
content



Embrace  
“**Just in time**”  
learning



Use a  
**VARIETY**  
of learning  
sources

Encourage  
**Front-line**  
Manager engagement

Proactively  
**coach** and  
develop employees



**Embed**  
learning as an  
ongoing part  
of employee  
development



# BRIDGE GAP BETWEEN LEARNING AND APPLYING KNOWLEDGE

Need to accomplish three things:

- ✓ Bring the learning and the doing together
- ✓ Integrate learning into daily workflow
- ✓ Shadowing or coaching

Leaving this to chance **extends the amount of time** it takes somebody to perform effectively

# SUSTAIN ON-THE-JOB COMPETENCE

3-pronged approach



ON-DEMAND ACCESS TO RESOURCES



CONTINUOUS SUPPORT AND COACHING



REINFORCE LEARNING AND CONTINUED EDUCATION

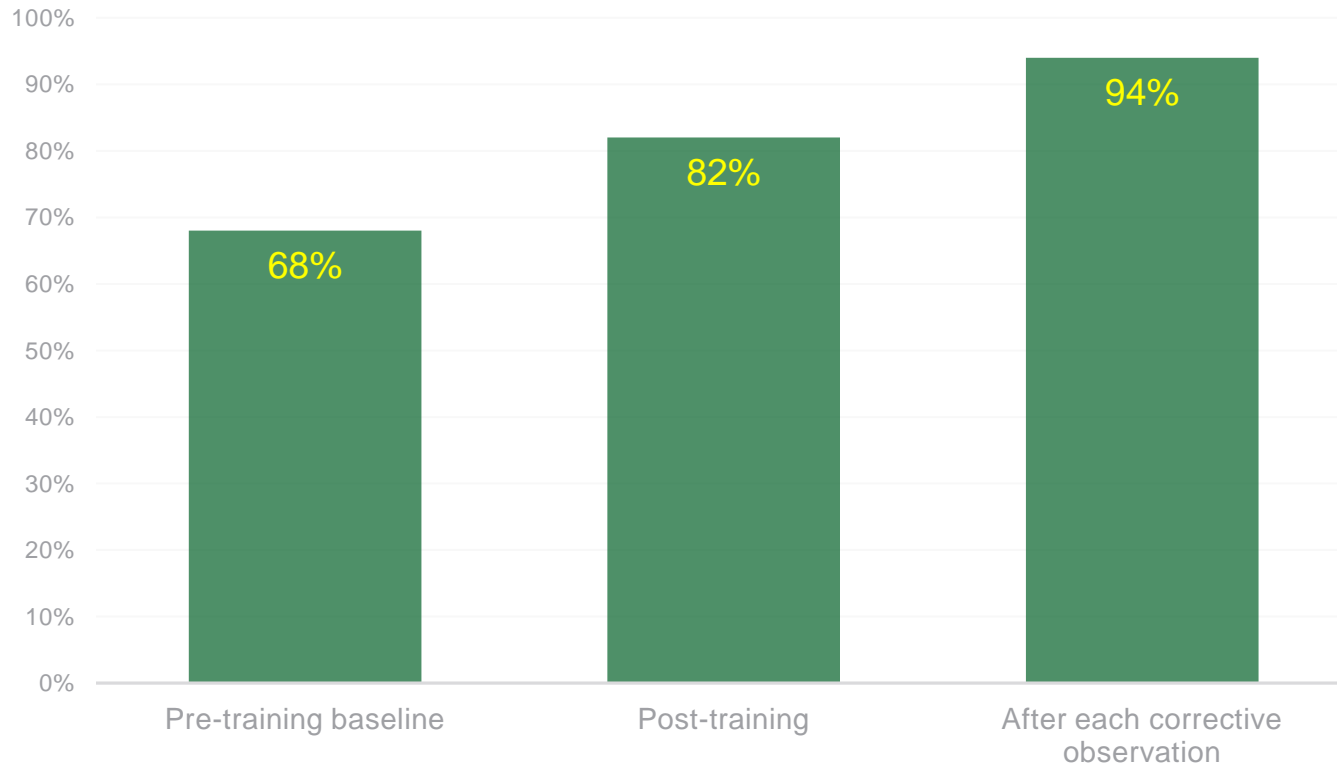


# How to verify effectiveness of efforts?

# CAN SUPERVISORY COACHING COUPLED WITH EFFECTIVE TRAINING DRIVE EMPLOYEE PERFORMANCE?

- Study at 4 food processing facilities
  - **Phase 1:** Identify process to improve and way to measure effective performance.
  - **Phase 2:** Parse the process into sequence of steps and behaviors. Train.
  - **Phase 3:** Supervisors conduct corrective observations.
- Measured compliance levels at pre-training baseline, post-training, and following each corrective observation.

# Food Handler Performance

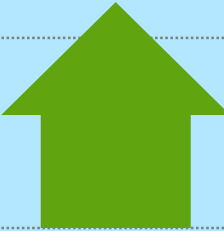


- Effective training + corrective observations + coaching = 26% improvement
- Key considerations
  - Training needs to be targeted
  - Need continuous training, coaching, and corrective observations.

Source – “The Positive Impact of Behavioral Change on Food Safety & Productivity”, Alchemy.

# MOVE EMPLOYEES TO COMPETENCE QUICKLY TO REALIZE FULL BENEFITS OF TRAINING.

Empowering deskless workers can result in tremendous business growth



Companies that offer comprehensive training enjoy a **24%** percent higher profit margin

<https://www.shiftelearning.com/blog/statistics-value-of-employee-training-and-development>

**40%** of employees who don't receive the necessary job training to become effective **leave** their positions within the first year

<https://www.shiftelearning.com/blog/statistics-value-of-employee-training-and-development>

## TURNOVER DATA



**Employee turnover rate  
for foodservice industry**

SOURCE: 2018 BUREAU OF LABOR STATISTICS

**\$1,800**

**Average cost of turnover  
for hourly employees**

**\$10K**

**Average cost of turnover  
for managers**

SOURCE: TDN2K, 2019 PEOPLE REPORT WORKFORCE INDEX

**67%**

**Restaurant operators  
who cite staffing concerns  
as a key cost driver**

**46%**

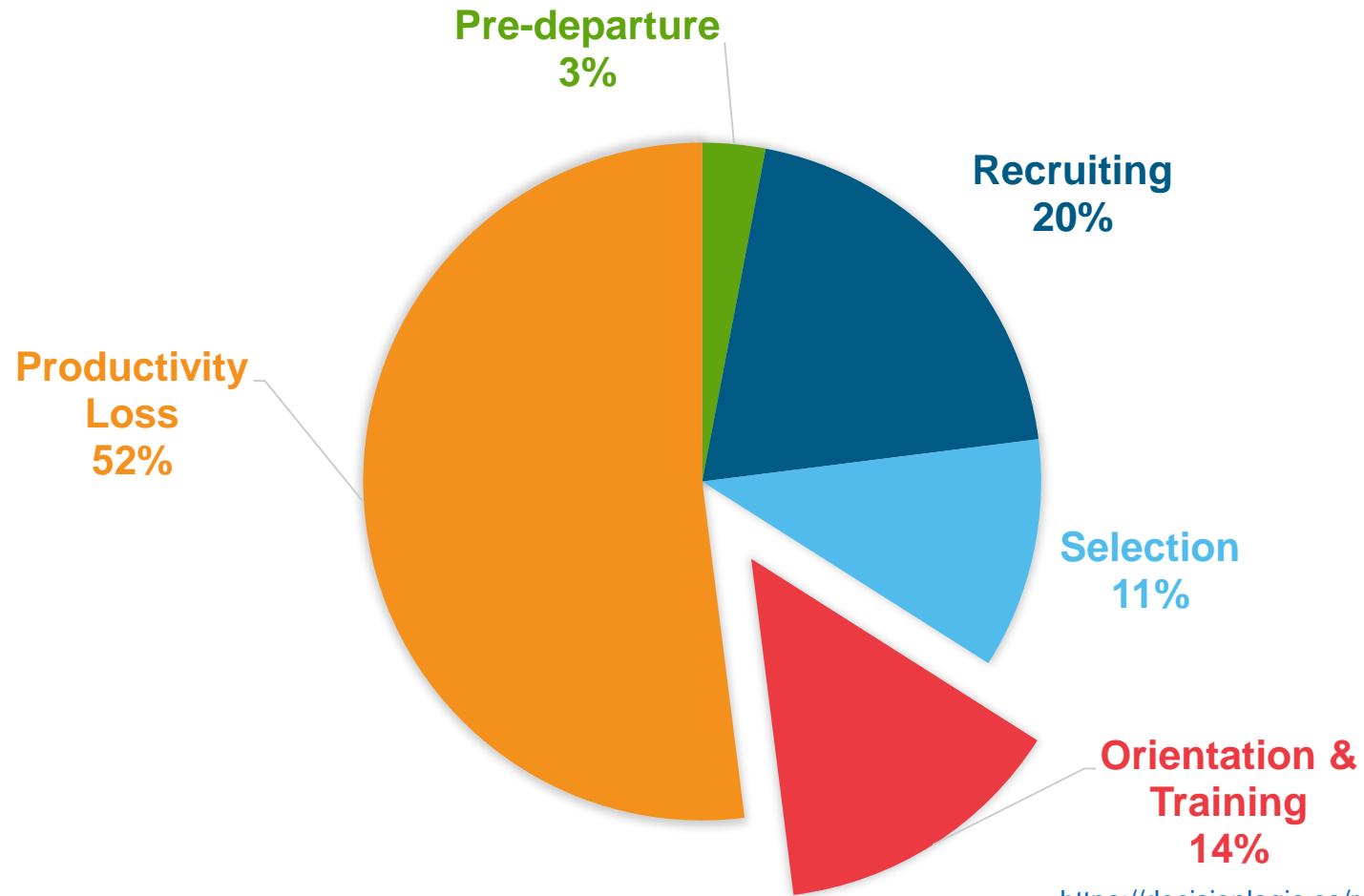
**Restaurant operators  
who have seen  
turnover increase**

SOURCE: NATION'S RESTAURANT NEWS AND FOURTH,  
2018 STAFFING CONCERNS IN RESTAURANT OPERATIONS SURVEY

<https://www.nrn.com/workforce/tactics-fight-store-level-turnover>

# COST OF EMPLOYEE TURNOVER

Estimated at \$5,864 per person for a typical front-line employee



<https://decisionlogic.co/restaurant-employee-turnover-cost/>

# WHAT YOU CAN DO TO MAXIMIZE TRAINING

1

**Adapt to today's learner** —  
put the individual at the center

2

**Train for best possible outcomes** throughout the continuous learner experience

3

**Embrace learning**  
as an agile business strategy

Position yourself  
for long-term success



# IN SUMMARY

---

- Evolve the training experience to **meet your employees working reality**.
- **Train for best possible outcomes** throughout the continuous learner experience.
- Embrace learning as an **agile business strategy** and keep the learner at the forefront.
- Find business **partners who support your training strategies**.

**ECOLAB®**