

# Implementing a Country- or Regional-Level Food Fraud Vulnerability Assessment (FFVA) and Food Fraud Prevention Strategy (FFPS)

Roy Fenoff, Ph.D.

Assistant Professor, The Military College of South Carolina

MSU Food Fraud Initiative

Food Fraud Workshop

Reykjavik, Iceland

September 24, 2019



# Today's briefing focuses on five objectives

- Define food fraud
- Discuss the human component of food fraud
- Review the food fraud compliance requirements
- Explain “how to start” and “how much is enough”
- Discuss how to manage food fraud using the Food Fraud Prevention Management System



# What is Food Fraud?



# Food fraud defined

- **Action:** Intentional deception using food
  - Including the FDA defined sub-category of Economically Motivated Adulteration (EMA)
- **Motivation:** Economic gain
- **Effect:**
  - Economic Threat
  - Public Health Vulnerability or Threat

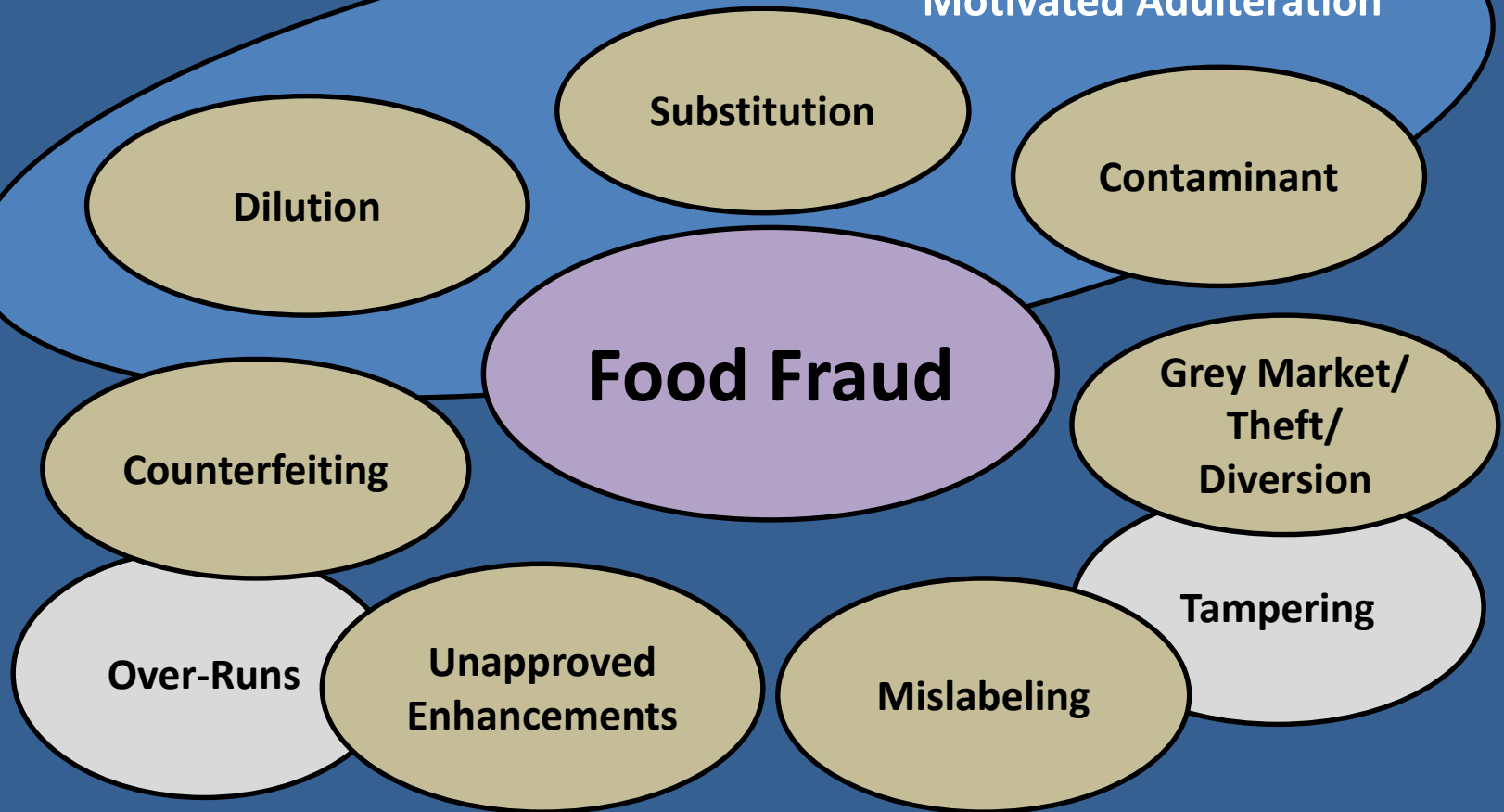
*Food fraud* is a collective term used to encompass the deliberate and intentional substitution, addition, tampering, or misrepresentation of food, food ingredients, or food packaging; or false or misleading statements made about a product, for economic gain.



# Food fraud includes...

All Fraud  
UK, EU, GFSI, China, ISO...

FDA/FR “Economically  
Motivated Adulteration”



# The food risk matrix

*Prevent by Understanding the Motivation*

**Food Protection**

<b>Food Quality</b>	<b>Food Fraud</b>
<b>Food Safety</b>	<b>Food Defense</b>
<b>Unintentional</b>	<b>Intentional</b>

## Motivation

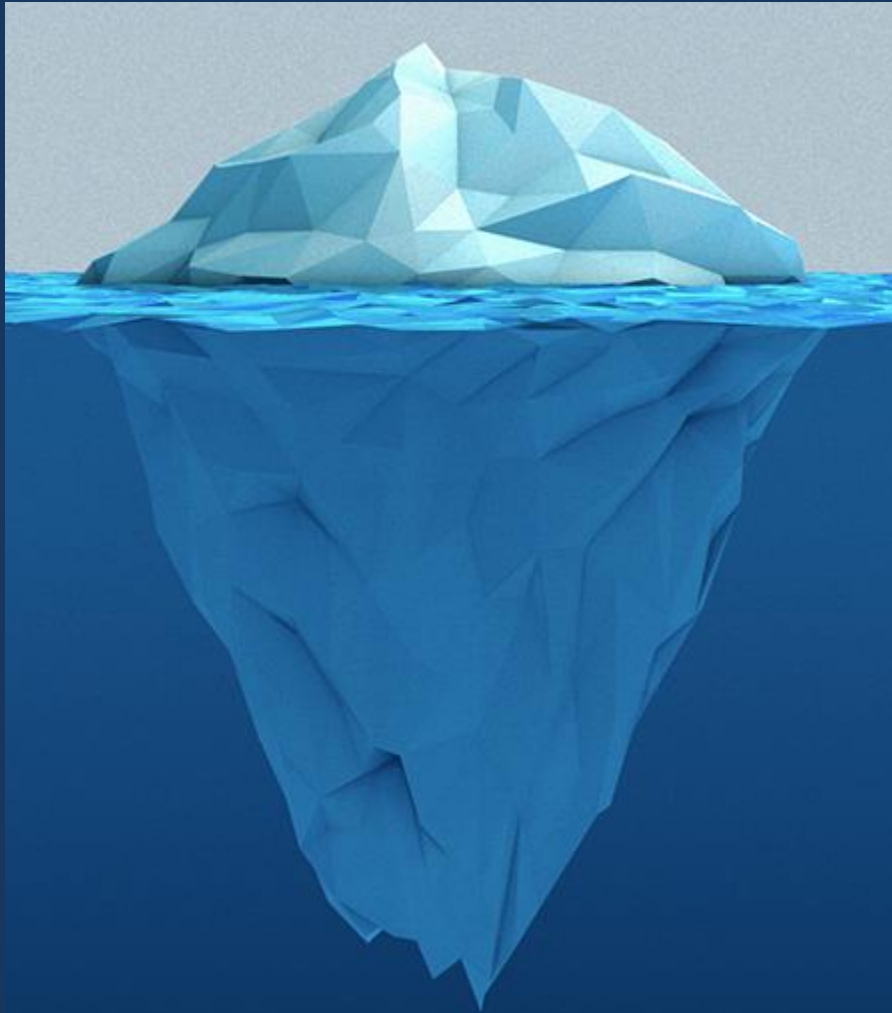
**Gain:**  
Economic

**Harm:**  
Public Health,  
Economic, or Terror

## Action



# Food fraud prevalence is unknown

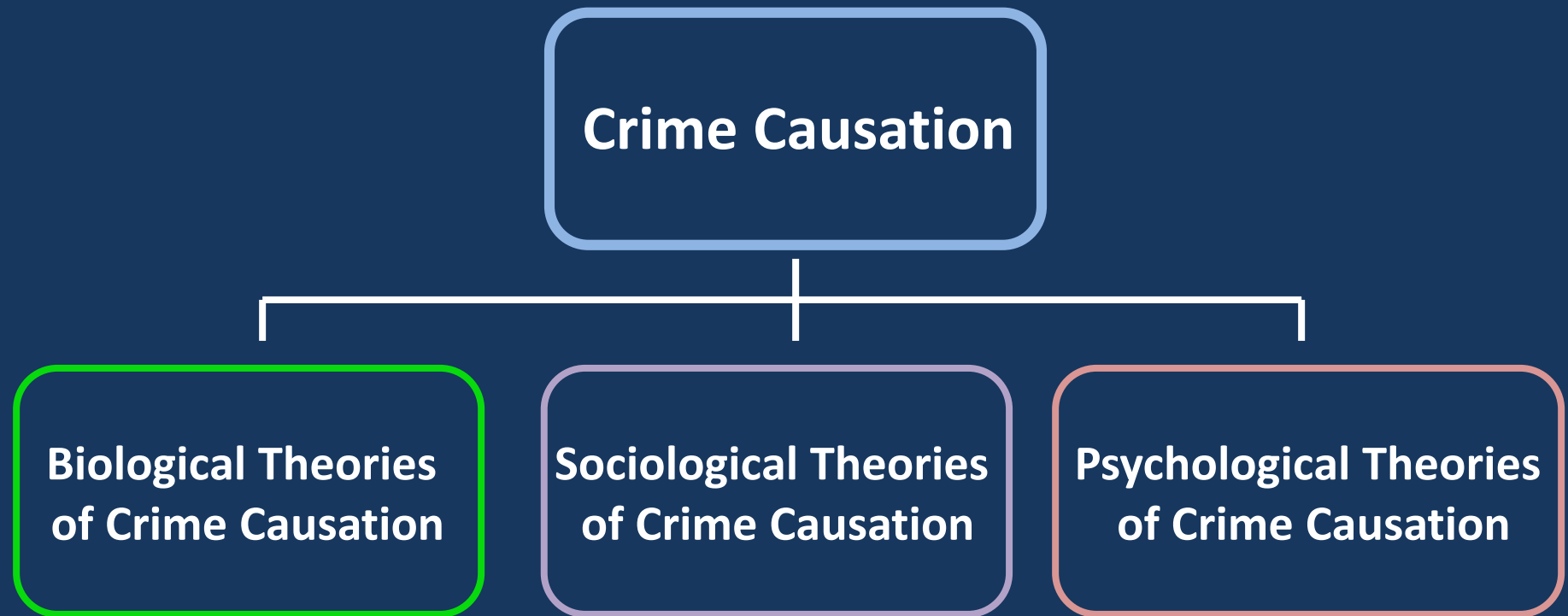


Identified  
Food Fraud cases

Unidentified  
Food Fraud cases



# Criminology attempts to explain crime causation



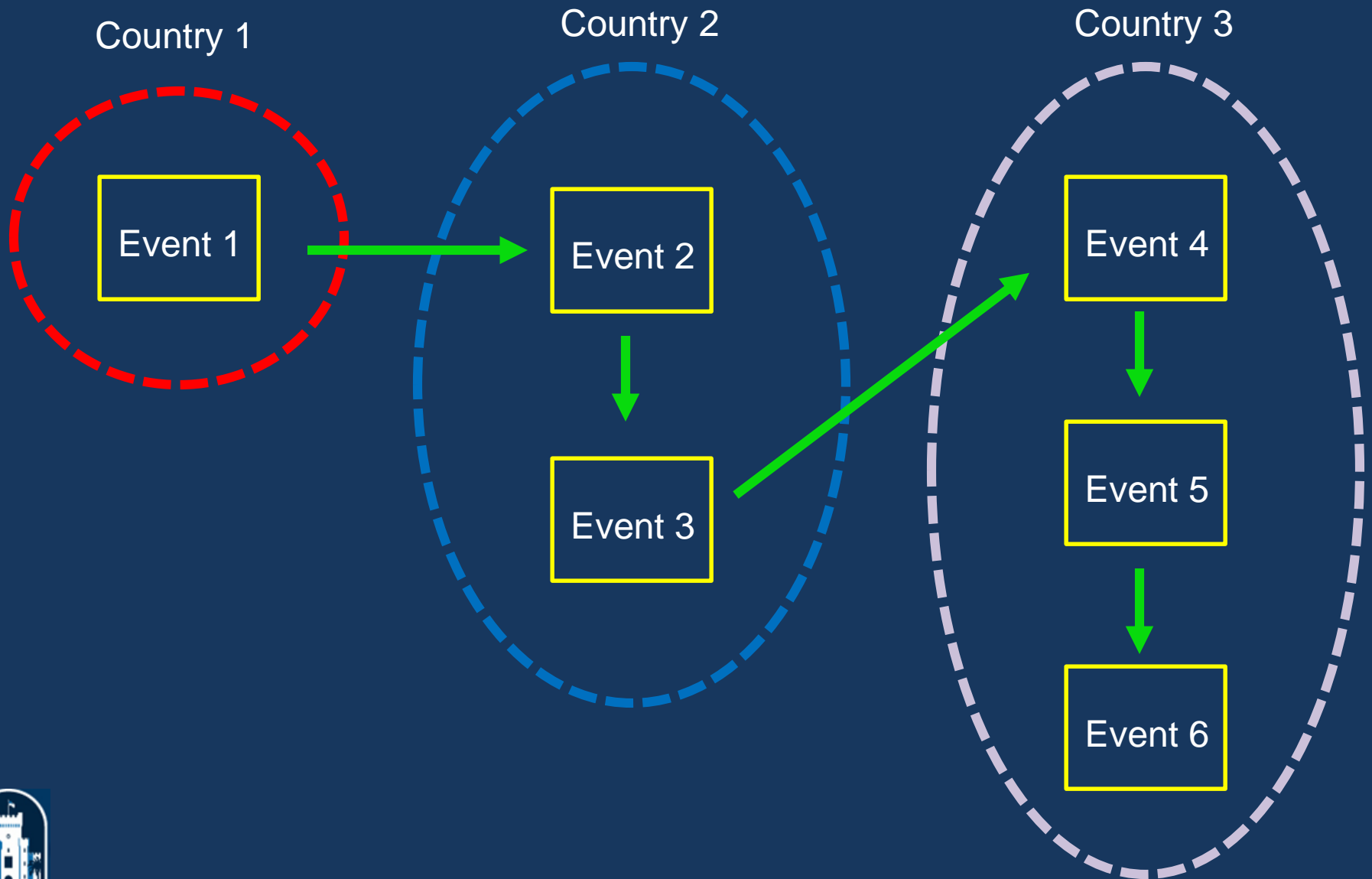


**While criminology attempts to explain  
crime causation...**

**Crime science focuses on opportunity**



# All crime is local



# Crime science focuses on opportunity

- **Routine Activity Theory**

- Motivated offender
- Suitable target
- Capable guardianship

- **Crime Pattern Theory**

- How offenders find crime opportunities

- **Rational Choice Theory**

- Offender decision making process



# Evaluating the fraud opportunity

- Established tenets of crime prevention theory guide our thinking
  - The crime triangle identifies the basic elements that comprise any problem
- We must analyze and understand these elements in order to solve problems



**Are we disrupting the chemistry  
of the crime?**

**Detect**

**Deter**

**Prevent**



# Food Fraud Compliance Requirements

Do I need  
to act?



# Food Fraud Compliance Requirements

- Global Food Safety Initiative (GFSI) – January 2018
  - Food Fraud Vulnerability Assessment (**All fraud**)
  - Food Fraud Prevention Strategy (**All products**)
  - Requires separate assessments for Food Safety (HACCP), Food Fraud (VACCP), and for Food Defense (TACCP)
  - *No documents = audit non-conformance*



# How to start

## Food Fraud Prevention Strategy – Management Strategy





# To begin, address these seven questions

1. Conduct a Food Fraud Vulnerability Assessment (Y/N)
2. Written (Y/N)
3. Implement a Food Fraud Prevention Strategy (Y/N)
4. Written (Y/N)
5. Minimally conduct an annual Food Fraud Incident Review (Y/N)
6. Note: Address all types of Food Fraud (Y/N)
7. Note: Address all products from both incoming goods (e.g., ingredients) and outgoing goods (e.g., finished goods) through to the consumer (Y/N)



# Set the foundation for future activities

- **Concept one:** formally, and specifically, mention food fraud as a food issue.

and

- **Concept two:** create an enterprise-wide food fraud prevention plan.



# Establish a Food Fraud Task Force

1. Convene a Food Fraud Task Force
2. Create an Enterprise-wide Food Fraud Policy/Mission Statement and begin drafting a Food Fraud Prevention Strategy/ Plan
3. *Conduct the pre-filter Food Fraud Initial Screening (FFIS)*
4. Review additional needs including additional information or a more detailed Food Fraud Vulnerability Assessment (FFVA)
5. Review specific Food Fraud vulnerabilities in an enterprise risk map (Enterprise Risk Management)
6. Consider countermeasures and control systems to address the 'very high' and 'high' vulnerabilities
7. Propose a Food Fraud Prevention Strategy including the calibration of the Food Fraud risks on the enterprise risk map



# How much is enough?

## Decision making and Enterprise Risk Management (ERM)



# Food Fraud Initial Screening

- Define likelihood – VH, H, M, L, VL
- Define consequences – VH, H, M, L, VL
- Raw materials: five products including other
- Finished goods: five products including other
- Evaluate the certainty: 1-10
- Evaluate the robustness: 1-10

# Matrix entry

- Overall: (1) incoming goods, and (2) outgoing goods
- Product/Groups (spices, meat, dairy, grains, all other goods, branded, etc.)
- Supply/Customers (countries, companies, types of products, TBD)

		Market or Region				
		Europe	North America	South America	Africa	All Other Regions
Product or Group		A	B	C	D	E
Spices	1	VH				
Meat	2					
Dairy	3					
Grains	4					
All other products	5					

# Corporate risk map

- All risks or vulnerabilities need to be assessed within the Corporate Risk Appetite on the Corporate Risk Map

**Likelihood**

	VH	H	M	L	VL
VH	A1		B3		
H			C4		A3
M		A2	D5		
L					D2
VL					

**Impact**



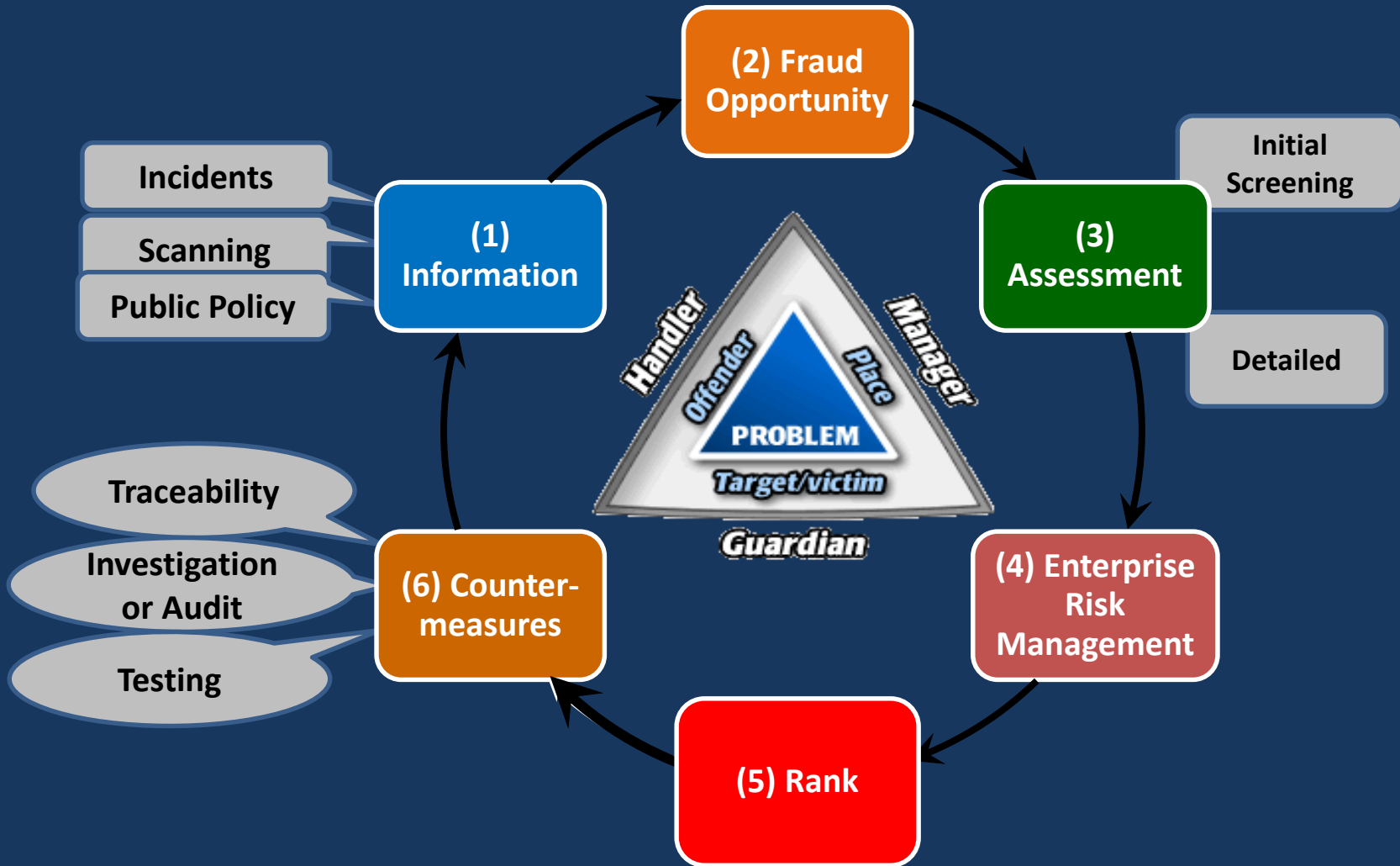
# How to Manage

## Food Fraud Prevention Cycle





# Food Fraud Prevention Cycle



# Summary

1. Establishing the Context
  - What is Food Fraud?
  - Is it a problem?
  - How to detect specific fraud acts, are new tests needed, and then validate the test methods?
2. Do I need to act?
3. How to start?
  - What to do?
  - 7 questions, 2 concepts, 7 steps, and 1 decision.
4. How much is enough?
5. How to manage?
  - Continuous review and process improvement.



# Michigan State University's Food Fraud Initiative

## Food Fraud Resources and Educational Opportunities



# MSU's Food Fraud Initiative Resources

- Massive Open Online Course (MOOC – free, open, online)
  - Overview, FF Audit Guide, FD Audit Guide, FFVA/FFPS
  - <http://foodfraud.msu.edu/mooc/>
- Primer Documents
  - <http://foodfraud.msu.edu/index/primers/>
- Executive Education (Short-Course)
  - Food Fraud Management Strategy & FFIV Workshop
  - Next offering: Feb 4-5-6, 2020



[www.FoodFraud.msu.edu](http://www.FoodFraud.msu.edu)

# MSU's Food Fraud Curriculum

- Graduate Courses (Online, Three Credits)
- Graduate Certificate (Online, Four Courses Each)
- Master of Science in Food Safety (Online)

***[www.FoodFraud.msu.edu](http://www.FoodFraud.msu.edu)***





# Questions and Comments

**Roy Fenoff, Ph.D.**

The Military College of South Carolina

[rfenoff@citadel.edu](mailto:rfenoff@citadel.edu)

[www.FoodFraud.msu.edu](http://www.FoodFraud.msu.edu)