

Proceedings of The Institute of Food Technologists' First Annual Food Protection & Defense Research Conference

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Atlanta, Georgia

[Session: Education and Outreach]

Interdisciplinary Model for Food Safety and Security for Educational Programming

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I'm going to summarize for you some initiatives relative to what we're doing at Kansas State Univ. It is the way we're doing business; it's not the only way of doing business, but I thought that I would share some specifics. As we consider the area of interdisciplinary or trans-disciplinary interaction, there are some initiatives at K-State that may help you understand the approach that we're taking. We coordinate, facilitate, and integrate across the disciplines at K-State as we work with faculty in 5 colleges and 11 departments. We also integrate facilities, commodity areas, teaching, research and extension, a comprehensive Food Science Institute effort. For example, research has to be integrated with what we teach. I believe it's the synergy among research, teaching and extension that makes a significant difference for the Institute.

Our program areas within the Institute are the undergraduate and graduate programs and we teach students on campus as well as by distance education. We really begin to emphasize distance education in 2001 and the interdisciplinary model that we have used is that full-time faculty facilitate other faculty to capture and edit their courses and to interface with the Division of Continuing Education. Those facilitating faculty are recognized and evaluated for that scholarly work and they also bring their discipline expertise to the program. Additionally, we integrate from pre-harvest all the way through consumption. It is a complex system but it must be integrated to provide a complete picture. We have integrated food safety and security across veterinarian medicine and agriculture, and beyond to include, for example, food service.

There has been integration with the social science areas, the Division of Continuing Education and Engineering. We work across the five colleges that I mentioned to bring the disciplines, facilities, faculty, students, and staff together in areas such as communication, crisis management, mental health, the library network, historical issues and border security. This team is facilitated by full-time faculty who work with other wise already busy faculty members to bring together their input and finish initiatives.

The facilitating faculty members are recognized not only for their facilitation and coordination efforts but also their individual discipline inputs. In addition to the cross cutting activities across the colleges and departments at the university, central administration has to give their enthusiastic support to make it happen.

The National Agricultural BioSecurity Center at K-State, also cuts across the university. It doesn't just integrate the traditional biological sciences, but it also covers the social science aspects of teaching, research, and extension. We engage the animal and plant health areas,

the environmental aspects, and we interface with the Public Health Program. The Provost's office funds this interdisciplinary activity across the university.

We have also explored what we need to do in the soon to be completed BL3 facility as interdisciplinary needs are considered. We want to be able to validate technologies against actual pathogens. In some cases, the use of surrogate organisms is not adequate; therefore, we not only have the BL2 facilities, but the BL3 facilities and hopefully we are able to integrate both capabilities. The capabilities in the BL3 facility include being able to integrate disciplines all under BL3 containment to include large and small animal production, plant production, and related food processing.

Insect vectors, basic molecular biology and training facilities are in that same facility. With the interdisciplinary model of having faculty facilitate faculty, we were able from 2001 to this point to create a comprehensive offering of food science undergraduate and graduate certificates, a Bachelor's Degree completion program, and the Master's Degree. We have as many students off-campus now as we do on-campus.

This same approach could be used to support food safety as well as security programs. We have worked to enhance distance courses to where they are as good as we can make them by internet delivery and try to replace some of the aspects that are realized on site at the university and add them into the courses. We have identified 20 module (1 to 3 h) topics and experts in each area to teach these modules. We can then overlay the modules on a variety of audiences to elevate their level of thought and awareness about Food Safety and Security. The modules do not give a lot of detail and they can be mastered fairly quickly. The audiences' level and awareness can be quickly enhanced. One can take the modules a synchronously by distance.

Let us now turn to Donna Schenck-Hamlin who will explain how to supplement a module with additional details. Information Specialist in our library's can help us with this?

DR. KASTNER: Donna Schenck-Hamlin works at the library at Kansas State Univ.. We indicated to her that we are producing some food safety and security modules and we're not going to give a lot of detail. Rather we were going to give people an appreciation for the spectrum of what is included in the food safety and security but there needs to be more detail. Donna Schenck-Hamlin indicated that she can do her magic, which she's going to tell you about. Specifically, she is able to add more detail so that one could get more information about a given module. Donna, I'll turn it to you.

MS. SCHENCK-HAMLIN: Thank you, Curtis. Thank you very much and thank you to Ed for giving me this opportunity to talk to a broad audience. I'm hoping that what you come away with today is a plan to go visit your librarians and to become acquainted with their capabilities and their vital interest in helping you get really good content out of the web.

Today librarianship is faced with a lot of new challenges; in fact, a lot of us wish we didn't even have to call ourselves librarians because it tells you no more about what we do than a hospitalian would describe a doctor or nurse, radiologist and so on. Our major challenges now are the incredible number of data bases on the web, and the fact that people need help in filtering out the noise to get exactly what they want.

We've long since stopped talking about the information explosion; right now it's just a matter of defining information sub-sectors, and creating strategic collections which might be located virtually in a lot of different places, but which are critical to your work and should seem to be collected in one area. For that we need partnerships with researchers and teachers, and that's why I'm here today.

We've been trying for the last couple of years to garner enough support in the area of food safety and security to essentially help you identify and acquire the critical information that you need in an educational capacity. That is basically our mission and I'm working with Michigan State Univ. and Purdue Univ. on this effort, but we would certainly welcome information experts from other universities as well.

Here are basic assumptions; our assumptions are that a lot of you come through the research community, and are quite accustomed and probably pretty self-confident in being able to trace the information through your professional scholarly journals. But when it comes to the function of providing information in classroom settings of various kinds, some documentation is more readily adaptable to that function than others. We think that it's up to the information managers to help you develop an improved system for harvesting that documentation based on attributes of documents that readily fit that educational function.

Here is the road map for a project that is already virtually underway but has been articulated in a number of grant proposals that we've put out and are continuing to pursue. The first thing that those of us working in the library field need to do is understand the situation and outlook for a food safety and security curriculum. I've been looking at it very closely for the last year with the help of our collaborators and faculty; we're getting a pretty good handle on some of the challenges. We're analyzing the cross disciplinary domains of knowledge in food safety and security. One thing that we are very interested in doing is examining the document categories that readily lend themselves to instruction.

Instruction we're defining here as everything from a short course developed by industry for industry workers all the way to dissertations in higher education. We're interested in tagging – and I'll be talking about Metatags a little bit later on food safety and security documents that do meet the goodness of fit criteria for instruction so that information retrieval systems will readily come up with those at the top of a search list. Then what we are looking for ultimately is once this kind of literature is easily recognizable and tagged, having a means for aggregating it virtually between repositories. Let's say there's a Michigan State repository, a Kansas State repository that all contain this information. We now have the technology to harvest and exchange large volumes of records about documents between our two institutions.

In terms of understanding the situation and outlook, we've got an initial inventory database that Michigan State developed of nationwide food safety and security course offerings that we are developing in greater depth right now. In order to analyze how much coursework is out there, we look at its content; that is to say, its syllabi, its lectures, its exercises, all of the deliverables of an education online. So we're right now in the process of drawing that picture and inventory out. A principal challenge that we've already discovered is that in the range

of food safety and security course offerings that we're finding on line, a real challenge is going to be extracting out of a security or criminal justice coursework the documentation that addresses the food sector.

We're dealing with problems in cross disciplinary knowledge in translation – this is just one example of what we have to analyze in terms of our challenges. I've heard other, better examples than this earlier in this meeting, but a discussion of language is needed to define our terms. That's why it's great to have this glossary on the NCFPD education website. There needs to be a quick place for people to look up what our population is meaning by the term "food security."

Here are just some examples of the kinds of documents that you could download from a Google search when you search on terms having to do with food safety or security. As you all have known from searching Google – it's probably the search engine I use the most on a daily basis – you can get "millions and billions" of hits. It's a major frustration and a challenge for us to find out the context of the search results we're getting. I might look at this example and say, "Well, yes, it matches my keyword search, but I would never use this in a *class*" or, "How could I use this in a class?" In terms of examining the document categories that readily lend themselves to an instructional function, one approach we might take among many is to try to find out from you all what are the most frequently sought after knowledge repositories, government or otherwise, that you typically turn to besides your scholarly journals in developing content to deliver on a course.

FIS, SIS, WHO, CDC – In looking at their repositories, their library sections or their publication sections, are there any document *types* that are featured in those repositories that would be appropriate for an educational context? I'll just show you some examples that are or are not appropriate for a given course development exercise.

Here's an FSIS directive, 5011. This might be very good for a further reading or something to put into a bibliography at the end of a course but I doubt that you condense all the detailed information from an FSIS directive into a short module offering. It's something people should familiarize themselves with on their own time. Somewhat more concise, I've discovered that INFOSAN has some very useful, easily condensable information notes that can be used in a short course especially. It depends on what you are trying to offer, what claim you are trying to make or how you are trying to illustrate a point in a given lecture what might be useful.

In some sense it seems like the sky's the limit; this is too big a task. I'm sure I could ask Curtis for a given lecture, how many different kinds of sources would he rely on to make his point, or illustrate it to give people some training. He might be able to find in a very detailed report a point that he wants to make, such as this claim that CDC systems have contributed to food safety but that "there are problems with the usefulness of several of these surveillance systems." Though that is a time-sensitive report and opinion, maybe he still wants it to illustrate a particular point in a given lecture.

How are we going to help him find that kind of information appropriate for course delivery? Well, one of the approaches that we want to take is we want to develop a topology of the most useful *genres* of documentation and then find them with food safety and security literature. I come from a literature background so "genre" means something intuitively to me; poetry is one genre, drama is another and I don't know if we are all accustomed to thinking about document types in scientific and technology works, but I'd like you to start thinking about that.

As you do your next Google search, think "What am I looking at? Am I looking at a bibliography, or am I looking at a directory? What is the genre of this deliverable format of knowledge, and how would it help me in a teaching context?" I'm finding support in the information science literature that indicates that in information retrieval, genre plays a very critical role in helping us to determine the usefulness of a particular document to a particular context.

One of the things that we are planning on doing with our collaborative group is explore not only genre terms but keywords in order to help educators to pull out the kind of documents that they need as they develop their coursework. Here's an example of a website in which I'm seeing from the citation words that just jump off the page at me to indicate that this is a particular genre. Even before clicking on it I know the probably extent and the depth of the reference, and whether I want to look at it. For example, this first reference is a "letter", then there is another indicated as a "special report". Well that's not a very useful genre term; look at the fourth one down that says, "report card". I'm hearing an awful lot these days about "report cards" and "lessons learned".

Those are important phrases to remember as you are out searching for information to illustrate a particular point in food safety and security. Here's some interesting examples of genre names that we might develop in a list to augment our searching; "white papers" – they have a certain functionality, you know what kind of an audience they address and what kind of depth they are liable to provide. Other examples are "letters" and "directives". We've already seen FSIS directives, reports, report cards, and standards. You know as a teacher when you want to use some of these genres and not others but you haven't had the tools that label information systematically in that way. So how could we marry this idea of searching by genre to an education context?

Well we think that if we all got together with a good sample of FSS documentation that we would like to employ in an educational context, what we might be able to do is classify it by educational objectives. I'm suggesting we go through an intellectual exercise of asking what kinds of genres tend to lend themselves to different educational objectives. For example, when Curtis talks about developing an "awareness module", you're not going to give him a dissertation. You're probably going to consider as far more useful such genres as "testimony", "reports" – though I don't like that term because it's far too widely applied – "report cards", "lessons learned", or "case studies".

We have all seen a lot of "fact sheets" but there is also systematic information in "handbooks", and in terms of developing capabilities, you might have documents labeled as "planning guides" and "response plans". A lot of this vocabulary is derived from language in the titles of the documents that we are looking at, but not necessarily. So what we think is needed is a metadata typing of the documentation to help iden-

tify appropriate information. One metadata set I use is called "Dublin Core"; it's a method developed in Dublin, Ohio with an international group that met annually to create the standards to describe all knowledge resources regardless of format. This system of Dublin Core metatags offers us an ability to label information in an electronic context on the worldwide web. You may not see this metadata on the text of an internet document, it's embedded in the markup language, is helping search engines like Google find the document for you. This is an example taken of an HTML document, webpage at K-State of Dublin Core metatags that labels the descriptive elements of a particular knowledge object.

The importance of Dublin Core Metatag elements, one of which is "Subject", another one of which is "Type" is that the food safety and security community could come up with its own thesaurus of vocabulary to characterize the food safety and security subjects and document types. That's what we are shooting for. The Dublin Core standard metatags promote data exchange, that is, the harvesting of knowledge records between one repository and another. We are hoping between universities to go through an exercise called Open Archives Initiatives Metadata Harvesting Protocol, to download and exchange large volumes of records that have already been categorized and characterized using Dublin Core metatags.

Then, if there is the desire to develop a food safety and security search engine, we can design the interface to expose the searcher to these categories. Here's an example that shows similar dropdown lists that allow the searcher to fine-tune what they are after. This examples shows a metadata element called "Audience", which I think would be very important for you as you target your information to different populations. It shows "Topics" but that's a very generic term; I think we're going to get down to a much more finely tuned, granular way of describing food safety and security subjects and topics after we go through a series of exercises together. In summary, we're welcoming collaborators and would like to have people who are excited about these kind of linguistic exercises to join with us on developing a food safety and security – well I don't like to use the term "controlled", how about "recommended" – vocabulary for characterizing your own publications. This will enhance the discovery of your own educational resources and help you find the resources of others in the future.

**INTERDISCIPLINARY MODEL FOR
FOOD SAFETY AND SECURITY
FOR EDUCATIONAL PROGRAMMING**

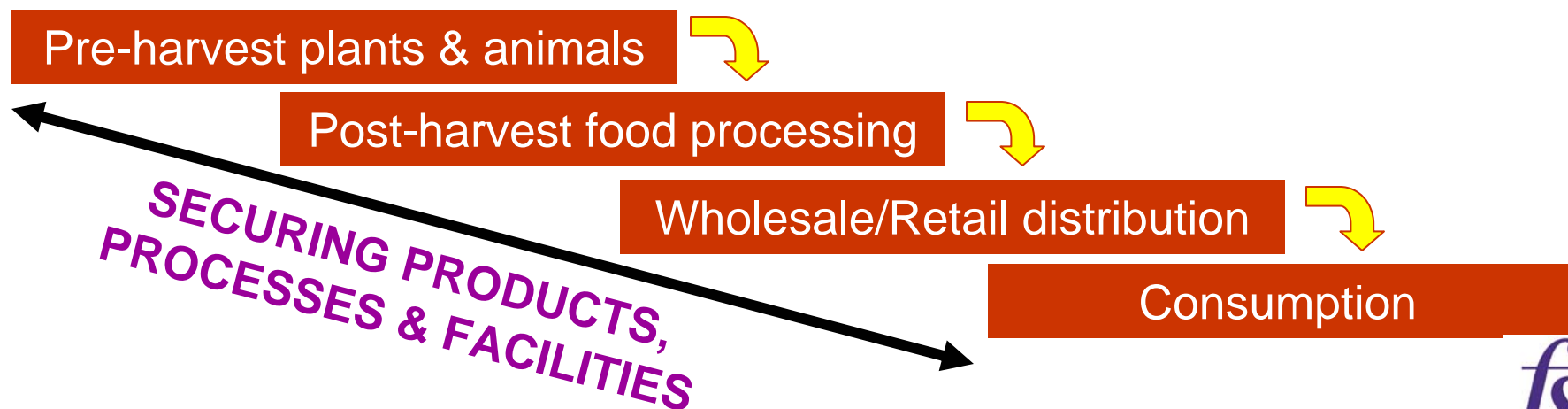
Food Science Institute

- Interdepartmental / intercollege programmatic Institute – 2001, Food Science Program since 1965
- Institute – Increase visibility and capacity of Food Science Programs
- Coordinate and facilitate integration of disciplines, facilities, commodities, and TRE across KSU
- Program Areas
 1. Undergraduate
 2. Graduate
 3. Distance Education
 4. Value Added
 5. Functional Foods and Nutraceuticals
 6. Food Safety and Security

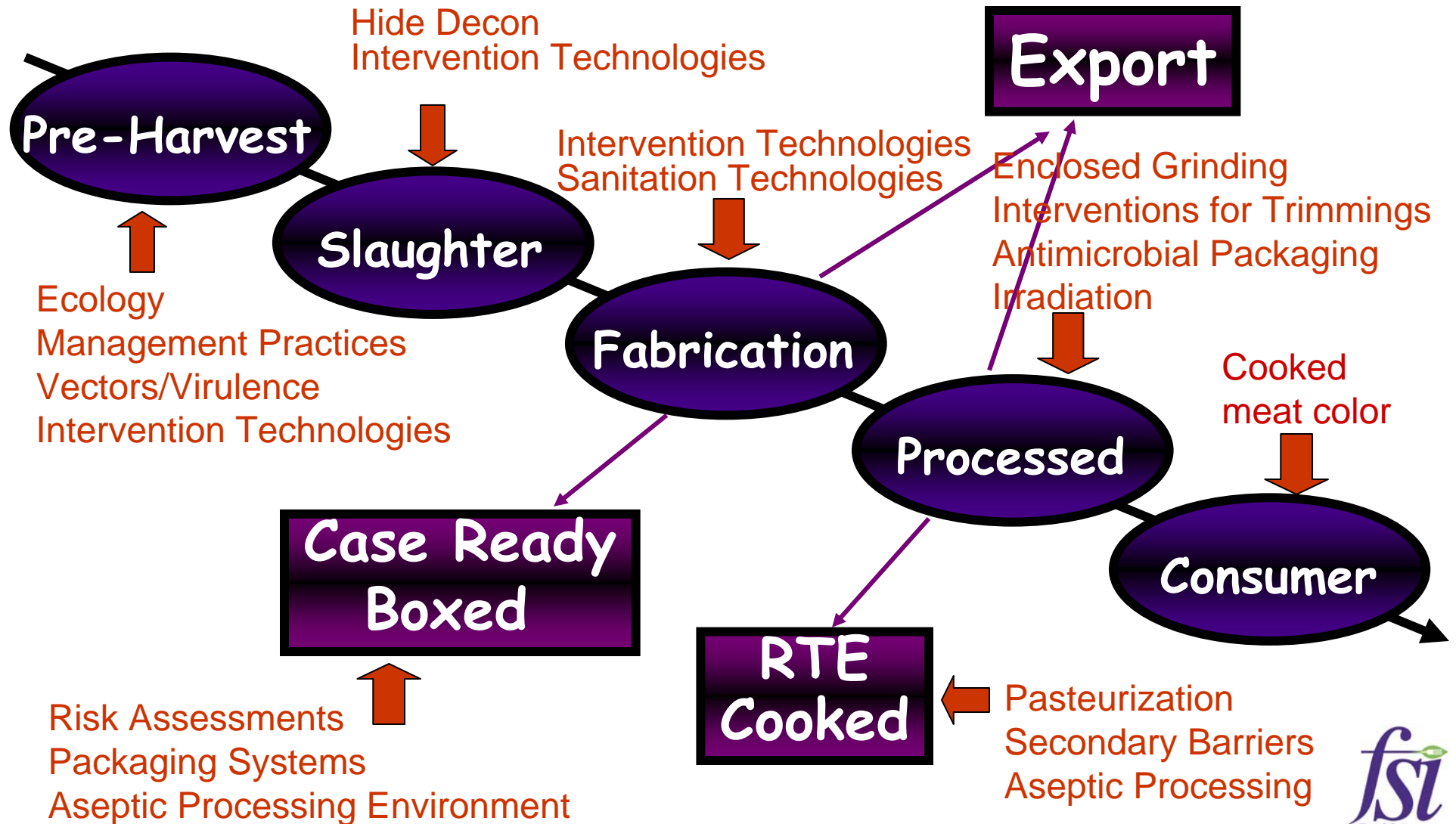
Food Safety and Security

K-State Program Philosophy

- Food production and processing is a complex, highly integrated, commodity and product specific system.
- What affects products at one point in the production continuum profoundly impacts the safety and security at downstream points.
- Hard to conduct this type of “food continuum” integrated research presently.



Meat Production Continuum



K-State's Food Safety & Security Program

Div. of Con. Ed.

Ag Econ & Policy

Engineering

Historical Studies
(border security /
trade policy)

Pre-harvest FSS

Colleges of Vet Med & Agriculture
Biosecurity Research Institute (BRI)
National Agricultural Biosecurity Center (NABC)
(epidemiology / microbiology / toxicology / plant pathology)

Program
Evaluation

Library
Services/
networks

Post-harvest FSS

Colleges of Ag, Human Ecology & Vet Med
(food service safety / sensory analysis / consumer behavior / public health / nutrition / microbiology / toxicology / processing)

GIS &
Environment

Communication / Crisis
Mngt / Mental Health /
Information Technology

Cross-cutting Issues (Colleges of Ag,
Arts & Sci, Engineering, Human
Ecology, Vet Med)

Food Safety and Security

KANSAS STATE UNIVERSITY

Supporting Programs:

Food Science Institute (2001) -- 5 Colleges and 11 departments

National Agricultural Biosecurity Center at KSU (2002)

Biosecurity Research Institute at KSU -- \$54 M facility

Food Safety Consortium – 18 year research collaboration between
KSU, Univ. of Arkansas and Iowa State University; sponsored by the USDA

FOOD SAFETY and SECURITY at KANSAS STATE UNIVERSITY

- ✓ A “*farm to fork*” approach based on HACCP concepts
- ✓ Integrated, multi-disciplinary, and comprehensive effort
- ✓ Mature program with well-developed infrastructure
- ✓ Internationally recognized research and training programs
- ✓ Highly successful in technology transfer to food/ag industries
- ✓ Important collaborations with industry, government and consumer groups
- ✓ Highly applied and targeted towards real life issues !!!

**Solid foundation for the new challenges
of Ag / Food Security**

Agricultural Security Initiative

- Animal, Plant & Food Security
- Environmental security against microbial hazards
- Public health program interface
- KSU Provost-sponsored *Targeted Excellence Program*
- Collaborations with other universities, government & business sector
- Kansas Bioscience Initiative
- Kansas City Area Life Sciences Institute



K-STATE Model for Food Safety Evaluations

- Processes must be validated against actual pathogens under typical production settings
- Use of surrogate organisms is not adequate
- BL-2 and soon to have BL-3 processing facilities
- Use actual processing equipment when opportunity exists
- Verify that laboratory validated processes (results using pathogens) are valid in commercial situations (results using physical parameter monitoring and native bacterial populations)



Biosecurity Research Institute

Biosafety Level 3 and 3-Ag high level containment lab complex

Projected completion Fall 2006



Biosecurity Research Institute

Interdisciplinary research
addressing an integrated food
system

1. Large and small animal rooms and support facilities for infectious disease research
2. Slaughter floor and associate food processing facilities
3. Plant pathology laboratories for research on pathogenesis and toxin biosynthesis in food crops
4. Insect vector research labs
5. Basic molecular biology laboratories
6. Biosecurity education and training space
7. Administrative support

Distance Learning Opportunities

- **Undergraduate Certificate**
 - 1970's
 - 40 students
- **Bachelor Degree Completion Program**
 - Animal Science 1990, FDSCI 2000
 - Current enrollment of 101 students
 - 26 in Food Science, Science option
 - 31 in Food Science Business option
 - 44 in Animal Science, Animal Products option
- **Graduate Certificate**
 - 2003
 - Approximately 7 graduates
- **Master of Science Degree Program**
 - 2002
 - 30 active students
 - Master of Science Degree Program
- **Facilitated and Coordinated by a Faculty Team**



Example Distance Courses in Food Safety

- Principles of HACCP
- Food Microbiology
- Electronic Animal Identification (RFID)
- Applied Meat and Poultry Microbiology
- Epidemiology
- Disease Epidemiology
- Fundamentals of Communication for Agriculture and Food Sciences



Enhancement of Courses in Food Safety



- **Add interactive components to engage students**
 - Example 1 – HACCP Review
 - Example 2 – Microbiology Review
- **Provide an outlet for experiential learning to be shared among students**
 - **Message Boards**
 - **Grouping Tools**

Ongoing Distance Education Initiatives

- **MPH with a Food Safety emphasis**
- **Targeted Excellence Program at K-State**
 - **Multi-Discipline Collaborative Efforts**
- **Graduate certificate in Food Safety and Security**
 - **Consortium of Universities – Higher Ed Challenge Grant**
- **Grant – USA/Mexico/Canada**



Proposed Food Safety and Security Modules

- **History – Science, Public Policy, and Regulations**
- **Physical Site Security**
- **Forensics in Agriculture and Food Bioterrorism**
- **Diplomacy of Food Safety and Security**
- **American Border Lands and Border Security**
- **Economic Principles in Food Safety and Security**
- **Consumer and Risk Communication**
- **Public Health Strategies**
- **Societal Considerations**
- **Basic Epidemiology**
- **Basic Risk Management**
- **Basic Microbiology**
- **Basic Toxicology**



Proposed Complementary Library Project

- **Mission: Offer educators in FSS a means to identify and acquire critical documentation for course content delivery.**

Assumptions

- While educators employ a wide range of literature generated as *research*, the functional attributes of some documentation makes it more readily useful to *instruction* in FSS
- The creative process of educators can be enhanced by an improved system for “harvesting” documents based on those attributes

Roadmap: What is involved?

- **Understanding “situation and outlook” for FSS curriculum**
- **Analyzing cross-disciplinary domains of knowledge in FSS**
- **Examining document categories that readily lend themselves to instruction**
 - **At different levels, for different audiences**
- **Developing means to tag FSS documents identified as useful to instruction**
- **Collaborative aggregation and dispersal of identified documentation**

Understanding “situation and outlook” for FSS curriculum

KSU/MSU database of nationwide FSS course offerings is being developed and analyzed

Principle challenge is the extraction of *food-sector* related knowledge from course offerings pertaining to security (“defense”) as a whole

Analyzing problems of cross-disciplinary searching for FSS knowledge

Ex. For instruction of non-specialists, what terminology from one discipline or perspective requires “translation” into the idiom of another?

***‘food security’* (national food supply availability or prevention of tampering?)**

http://www.akdn.org/mountains/Mountain%20Workshop%20-%20Recommendations%20(edited%20for%20repor - Microsoft Internet Explorer

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Deutsche Gesellschaft für
Technische Zusammenarbeit (GTZ) GmbH

International Workshop on Strategies for Development and Food Security in Mountainous Areas of Central Asia June 6 - 10, 2005 -- Dushanbe, Tajikistan

This document contains a series of recommendations and findings based on the discussions, papers, and proceedings from the international workshop sponsored by InWent, GTZ and the Aga Khan Foundation, entitled, "Strategies for Development and Food Security in Mountainous Areas of Central Asia," held June 6-10 in Dushanbe, Tajikistan.

The recommendations are wide-ranging and have varying degrees of feasibility; however, all were considered important for development in mountain areas in this region, in the eyes of the workshop participants.

The recommendations are divided into four principal sub-groups: *Private Sector Development, Infrastructure, Governance, and Agriculture and Natural Resource Management*

1 of 6

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Examining document categories that readily lend themselves to instruction

- **What principle knowledge *repositories* might FSS educators turn to for resource material in *course development*?**
 - **FSIS?**
 - **WHO?**
 - **CDC?**
- **What primary document *types* are featured in those repositories?**
 - **Regulatory directives, such as FSIS 5000 series?**
 - **Notices on specific threats, such as INFOSAN “Information Notes”?**
 - **Reports to congressional committees, such as GAO’s reports on food safety preparedness?**

**UNITED STATES DEPARTMENT OF AGRICULTURE
FOOD SAFETY AND INSPECTION SERVICE
WASHINGTON, DC**

FSIS DIRECTIVE

5100.1

9/30/05

**ENFORCEMENT, INVESTIGATIONS, AND ANALYSIS OFFICER (EIAO)
COMPREHENSIVE FOOD SAFETY ASSESSMENT METHODOLOGY**

Part I -- General

I. PURPOSE

The purpose of this directive is to provide instructions to the EIAOs on the methodology that they are to use when they conduct comprehensive food safety assessments and on how they are to document their findings. This directive replaces and updates the Consumer Safety Officer (reclassified as EIAOs, who are under the direction of District Offices, Office Field Operations) instructions found in FSIS Directive 5000.1, Revision 1. This directive is the first in a series of directives that set out various activities of EIAOs.

II. RESERVED

International Food Safety Authorities Network (INFOSAN)

13 September 2005

INFOSAN Information Note No. 5/2005 - Natural Disasters

Food Safety in Natural Disasters

SUMMARY NOTES

When natural disasters strike, food safety is a crucial public health concern that is too often neglected. Under the extraordinary conditions that may occur during and after such disasters, the following issues require immediate attention:

- Preventive food safety measures
- Inspecting and salvaging food
- Provision for safe food and water
- Recognition and response to outbreaks of foodborne disease
- Consumer education and information on food safety

Need for Food Safety Advice

During or following natural disasters, such as the recent earthquake and tsunami in South East Asia or

Report Abstract

Food Safety: CDC Is Working to Address Limitations in Several of Its Foodborne Disease Surveillance Systems [GAO-01-973](#) September 7, 2001

[PDF](#)

Foodborne diseases in the United States cause an estimated 76 million illnesses, 325,000 hospitalizations, and 5,000 deaths annually, according to the Centers for Disease Control and Prevention (CDC). Surveillance is the most important tool for detecting and monitoring both existing and emerging foodborne diseases. In the United States, surveillance for foodborne disease is also used to identify outbreaks--two or more cases of a similar illness that result from ingestion of a common food--and their causes. **CDC has 18 surveillance systems used to detect cases or outbreaks of foodborne disease, pinpoint their cause, recognize trends, and develop effective prevention and control measures. Four principal systems--the Foodborne Disease Outbreak Surveillance System, PulseNet, FoodNet, and the Surveillance Outbreak Detection Algorithm--focus on foodborne diseases and cover more than one pathogen. Although CDC's systems have contributed to food safety, the usefulness of several of these surveillance systems is impaired both by CDC's untimely release of surveillance data and by gaps in the data collection.** CDC is providing funds to state and local health departments to address their staffing and technology needs to help the states provide CDC with more complete information. CDC officials have entered into a cooperative agreement with the Association of Public Health Laboratories to assess the states' capability and capacity to address public health issues, including foodborne disease. CDC consults annually with the Council of State and Territorial Epidemiologists to encourage more standardized reporting among states.

Subject Terms

Reporting requirements
Homeland security
Health hazards
Federal/state relations
Data collection
Botulism
Contaminated foods
CDC Botulism Surveillance System

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Develop a typology of most useful genres of documentation, then find them within FSS

“Genre systems offer potentially useful methods of analysis in information contexts ... recognition of genres creates a starting point and a framework of analysis for a domain... helps structure and interpret texts, events, ideas, decision, explanation, and every other human activity in that domain.”



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Selected Reading

- **Afton MK, Nakata M, Ching-Lee M, et al.** Food safety for first responders. (Letter) *Emerg Infect Dis* 2005 Mar; 11(3):508-9 [[Full text](#)]
- **Black J.** Why the food biz is hungry for tech. *Business Week* special report. Jul 8, 2003 [[Full text](#)]
- **CDC.** Safer and healthier foods. *MMWR* 1999 Oct 15; 48(40):905-13 [[Full text](#)]
- **CFSAN.** 2003 Foods program priorities report card. (Includes progress on implementation of new bioterrorism legislation.) Nov 24, 2003 [[Full text](#)]
- **Commission of the European Communities.** White paper on food safety. Jan 12, 2000 [[Full text](#)]
- **Daniels C, O'Neal Coates S, eds.** Focus on agriculture and food terrorism. (Special issue) *Agrichemical and Environmental News* 2001 Nov; 187 [[Full text](#)]
- **DeWaal CS, Robert N.** Global and local: food safety around the world. *Center for Science in the Public Interest*. Jun 2005 [[Full text](#)]
- **EFSA (European Food Safety Authority).** Update on avian influenza and food safety. Oct 26, 2005 [[Press release](#)]
- **Elson R.** Overview of incoming changes to European food safety and hygiene legislation. *Eurosurveillance Weekly* 2004 Dec 8; 8(50) [[Full text](#)]
- **FAO (Food and Agriculture Organization of the United Nations).** Codex Alimentarius Commission adopts more than 50

Good, bad, and interesting examples of genre names that could be used for FSS education

- **White paper**
- **Letter**
- **Directive**
- **Lessons Learned**
- **Report**
- **Report Card**
- **Fact Sheet**
- **Standard**

What role could *genre* play in document selection for food protection education? Are some educational objectives closely tied to **genre**?

- “Awareness” of hazards, vulnerabilities, risk: **report, report card, testimony, ...**
- “Recognition” of contaminants, outbreaks, threats: **fact sheet, handbook...**
- “Capabilities” in prevention, mitigation, remediation, restoration? **planning guide, response plan...**

**Developing means to tag FSS documents
identified as useful to instruction**

**Dublin Core (DC) metadata offers a universally
accepted standard for describing knowledge
resources, regardless of format.**

**Once discovered, a useful FSS education citation
can be “tagged” with DC labels and descriptions**

```
<meta name="DC.title" content="K-State Precision Agriculture">
<meta name="DC.subject" content="precision agriculture; ...">
<meta name="DC.description" content="This web site is dedicated ...">
<meta name="DC.creator" content="Randy Taylor">
<meta name="DC.contributors" content="">
<meta name="DC.publisher" content="Kansas State University">
<meta name="DC.date" content="05/30/2001">
<meta name="DC.type" content="home page">
<meta name="DC.format" content=".html">
<meta name="DC.identifier"
content="http://www.oznet.ksu.edu/pr_prcag/">
<meta name="DC.language" content="English">
<meta name="DC.source" content="">
<meta name="DC.relation" content="">
<meta name="DC.coverage" content="Kansas">
<meta name="DC.rights" content="http://www.ksu.edu/copyright.html">
```

Developing means to tag FSS documents identified as useful to instruction

Use FSS-standardized keywords or descriptors to “qualify” DC metadata

```
<meta name="DC:subject"  
  scheme="DCTERMS.FSS"  
  content="border security"/>  
<meta name="DC:type"  
  scheme="DCTERMS.FSS"  
  content="data sheet"/>
```

Collaborative aggregation and dispersal of identified documentation

- **DC standard promotes data exchange (“harvesting” of knowledge records) between repositories located anywhere online.**
- **K-State, Purdue, and Michigan State University propose collaborative repository development for mutual exchange**

Repositories can offer search engines with FSS subjects and genres

A model for this already exists at the
Centers for Public Health
Preparedness Resource Center

Centers for Public Health Preparedness | Public Health PreparednessResource Center - Microsoft Internet Explorer

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Please send any questions or comments to CPHP@asph.org

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You may select any number of sharable material types, audiences, or topics, by holding the CTRL key while choosing multiple expertise topics, services, or locations. You may only select one Institution at a time.

Sharable Material Type(s):
Select All Material Types
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Audio tape
CD-ROM
Comprehensive Course Outline
DVD

Audience:
Select All Audiences
Administrator/Manager
Bioterrorism Coordinator
Business and Civic Leaders
Dentist
Emergency Management (FEMA, civil defense, etc)

Topics:
Select All Topics
All-Hazards
Biological
Chemical
Clinical Lab Preparedness
Coordination Across Agencies/Species

Institution: Select all Institutions

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Keywords Search in Resource Description

Keywords:

Search

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Collaborators Welcome!

- **Help develop FSS controlled vocabulary**
- **Apply metadata with FSS vocabulary to identified FSS document records**
- **Test OAIMHP for metadata exchange**