

# USDA ARS 2nd International Biosafety & Biocontainment Symposium

*Agricultural Research and Response for Field and Lab*



**ars** Agricultural  
Research  
Service



## Preliminary Program

**February 4-7, 2013**

**Hilton Alexandria Mark Center  
Alexandria, Virginia**

[arssymposium.absa.org](http://arssymposium.absa.org)

**United States Department of Agriculture, Agricultural Research Service  
2nd International Biosafety & Biocontainment Symposium  
Agricultural Research and Response for Field and Lab**

**February 4-7, 2013**

**Banquet—Dinner and Entertainment**

Wednesday 6:00 pm - 10:00 pm

The entertainment for the evening banquet will be provided by *Einstein Alive*. Marc Spiegel becomes a warm, vivid, and uncannily realistic Albert Einstein appealing to all ages. Professor Einstein speaks of his life and guides the audience through the adventures in his mind. Plan to join us for this unique experience!

**Registration Desk**

Monday 7:00 am - 5:00 pm

Tuesday 7:00 am - 5:00 pm

Wednesday 7:00 am - 5:00 pm

Thursday 7:00 am - 12:00 pm

**Opening Reception**

The Opening Reception will be held on Monday from 5:30 pm - 7:00 pm.

**Hotel Information**

Hilton Alexandria Mark Center

5000 Seminary Road

Alexandria, VA 22311

Phone: 703-845-1010

Fax: 703-845-7662

Confirmed rate: \$144.00 U.S. dollars

Cut-off date: January 15, 2013

**Exhibit Hall**

The exhibit hall will be open on Monday from 5:30 pm - 7:00 pm showcasing the latest in laboratory biosafety products and services. The exhibit hall will be open on Tuesday and Wednesday from 9:00 am - 4:00 pm.

American Biological Safety Association is approved as a provider of continuing education programs in the clinical laboratory sciences by the ASCLS P.A.C.E.® Program.

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**Elizabeth R. Griffin Research Foundation**



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2nd International Biosafety & Biocontainment Symposium  
Agricultural Research and Response for Field and Lab**

**Presymposium Courses**

Please visit our web site for course availability.  
<http://arssymposium.arsa.org/>

**Monday, February 4, 2013**

**8:00 am - 12:00 pm**

**1. Plant Pathology 101: Introduction to Principles of Plant Pathology**

*Deb Fravel, PhD, United States Department of Agriculture, Beltsville, MD*

*Doug Luster, PhD, United States Department of Agriculture, Fort Detrick, MD*

*Kirk Martin, DPM, SM(NRCM), CBSP, United States Department of Agriculture, Beltsville, MD*

This course will provide information regarding the categories, taxonomy, characteristics of plant pathogens, and an understanding of the plant pathogen disease cycle. Discussions will be held regarding the natural and anthropogenic factors influencing the spread of pathogens, pathways of introduction, and the examples of high consequence plant pathogens.

**Objectives:**

- Identify plant pathology principles and the characteristics of selected high consequence plant pathogens
- Develop perspective of the challenges associated with biocontainment of microorganisms

**Target Audience:** All

**Audience Level:** Basic

**1:00 pm - 5:00 pm**

**2. Plant Research in Greenhouses and other Specialized Containment Facilities**

*Dann Adair, BS, Conviron, Inc., North Branch, MN*

Research on plants and their associated organisms routinely conducted in laboratories, greenhouses, growth chambers, etc., is "in containment" versus research conducted in the field or natural ecosystem. This presents a range of challenges and opportunities for conducting quality research while meeting regulations or guidelines. The course will address various design and construction techniques, equipment, and management concepts needed to meet programmatic and regulatory requirements. USDA ARS, APHIS, NIH, and selected international regulatory documents will be referenced.

**Objectives:**

- Identify plant research facility designs and equipment
- Identify appropriate regulations and guidelines for programs
- Restate how to assemble a design team
- Differentiate between plant containment from traditional biosafety
- Describe the consequences of containment loss
- Summarize management techniques

**Target Audience:** Facility Designers, Managers, Researchers, Administrators, Maintenance Staff, and Biosafety Professionals

**Audience Level:** All

**8:00 am - 12:00 pm**

**3. Integrated Pest Management & Biological Control**

TBA

**1:00 pm - 5:00 pm**

**4. Agrodefense and Beyond: Laboratory Response Networks**

*Frankie J. Beacorn, MS, United States Department of Agriculture, Athens, GA*

*Paul M. Morin, ScD, United States Food and Drug Administration, Jamaica, NY*

This course will provide an overview of the nation's laboratory response networks and their role in response and recovery of the agricultural infrastructure in the event of intentional or unintentional contaminations that ultimately affect human health. The course will examine the operation of a laboratory network by focusing on the history, development, and activities of the Food Emergency Response Network (FERN). Examples of network activities in response to foodborne outbreaks and contamination will be described. Illustrations will be provided of intra-network and inter-network laboratory collaborations during times of emergency response as well as collaborations and communications with first responders. Laboratory safety issues and risk assessments specific to handling food samples that could contain unknown hazards associated with microbiological, chemical, and radiological threat agents will be discussed. Challenges unique to food testing laboratories including training, method development, method validation, and leveraging resources will be examined.

**Objectives:**

- Describe the rationale for laboratory networks and their responses during public health emergencies
- List the various laboratory networks and their functions in support of agriculture, human and animal health
- Express how laboratory response networks coordinate and facilitate agrodefense
- Recognize the complexity and importance of laboratory response and recovery to agricultural outbreaks or widespread contamination events
- Restate the unique challenges facing food testing labs that analyze samples for chemical, biological, and radiological threat agents

**Target Audience:** Biosafety Professionals, Regulatory Analysts, Network Member Laboratorians

**Audience Level:** Basic/Intermediate

**8:00 am - 12:00 pm**

**5. Biocontainment Techniques Beyond the Biosafety Cabinet**

*M. Malendia Maccree, University of California—Davis, Davis, CA*

*Richard G. Baumann, PhD, National Institutes of Health, Bethesda, MD*

*Srinivas S. Rao, DVM, PhD, National Institutes of Health, Bethesda, MD*

This course will discuss the latest recombinant gene-based technologies being developed to incorporate safety parameters in the study of biological systems. These safety features can be directly engineered into pathogens for their study, or indirectly to temper the risks associated with their use or application in larger scale animal and plant research. All safety issues outside the realm of physical barriers are appropriate for discussion, but this course will focus on molecular approaches. A portion of the course will be devoted to a review of the latest recombinant strategies being used to engineer safety features into vector systems for study in vitro and in vivo; and a discussion of recombinant vector systems and other novel approaches being studied, their construction, and preclinical studies in the context of ongoing animal and human vaccine trials. These discussions will review important safety and IBC review considerations for working with these systems. Another portion of the course will be devoted to describing these approaches in plants and will address the analogous safety and review considerations involving work with plant-related systems. This section will provide an introduction to the various mitigation strategies used to contain regulated articles (plant pests, pathogens, transgenes, and etc.). Participants will develop an understanding of the risk assessment process with a focus on containment strategies in non-laboratory settings.

**Objectives:**

- Identify and review the numerous rDNA approaches being used to introduce safety into biological systems being studied
- Summarize the molecular and biological strategies for containment of genetically modified microorganisms, animals, plants and plant pests
- Discuss key safety and review considerations and apply biological risk assessment principles to experiments involving genetically modified organisms, animals, plants and plant pests
- Identify types of animal and plant-based experiments conducted in non-laboratory settings and discuss important safety issues within these environments

- Explain the relative importance and interrelation of biological, administrative, and engineering controls used to mitigate biological risks in animal and plant-based research
- Locate and utilize informational resources for future reference and education

**Target Audience:** Research Personnel, Field Release Personnel, Biosafety Professionals, IBC Members

**Audience Level:** All

**1:00 pm - 5:00 pm**

## **6. Food Defense from Farm to Fork**

*Robert Buchanan, PhD, University of Maryland, College Park, MD*

*Henry S. Parker, PhD, Georgetown University Medical Center, Washington, DC*

Food defense may be defined as the spectrum of activities involved in protecting the food supply from deliberate or intentional disruption or contamination by biological, chemical, physical, or radiological agents. This course will provide an introduction to food defense focusing on threats and vulnerability of the U.S. food and agriculture infrastructure from deliberate attacks (i.e., agroterrorism). Programs and actions to protect the food supply from intentional disruption will also help protect the nation from unintentional or accidental threats. Major components of this course will include an overview of vulnerabilities; threats and risks of agroterrorism in the U.S.; agroterrorism and food defense for crops and commercial plants, livestock and poultry industries, and post-harvest food supply; review and assessment of food defense programs and preparedness in the U.S.

### **Objectives:**

- Define and distinguish the following: food security, food safety, and food defense
- Citing specific reasons and examples, explain how the U.S. food and agriculture infrastructure considered by many to be highly vulnerable to terrorist attack
- In economic terms, describe why the U.S. food and agriculture sector is a critical national infrastructure
- Attendees will be able to describe the disease agent, distribution (global and U.S.), means of introduction and transmission, hosts; clinical signs in susceptible species; diagnosis; prevention and control strategies and status; threats and potential impacts (including risks to human health) for a minimum of two foreign animal diseases

**Target Audience:** Biosafety Professionals, Biosecurity Professionals, others with a limited familiarity with the U.S. Food and agriculture infrastructure and food defense

**Audience Level:** Intermediate

**8:00 am - 12:00 pm**

## **7. Bioterrorism Awareness for the Animal Health Community**

*John E. Page, Federal Bureau of Investigation, Washington, DC*

This course will provide awareness to the animal health communities (agriculture and veterinary) in potential bioterrorism events and encourage cooperation among law enforcement agencies and the animal health communities in the mitigation of these events.

### **Objectives:**

- Identify potential Foreign Animal Disease (FAD) introduction avenues to private/commercial farms, agriculture industry-related sites (e.g., feedlots), and veterinary schools
- Describe indicators of a potential bioterror event
- Discuss animal biological agents, unique vulnerabilities of the agricultural/veterinary industry, and unique methods of attack that a bioterrorist may use in targeting livestock
- Identify unique regional characteristics of animal health community such as bioterror events and bioterrorism criminal investigations
- Identify biosecurity roles and responsibilities of research institutions regarding the security of the animal biological agents (select agents) and the people in contact with them
- Identify benefits and potential obstacles to improve cooperation among law enforcement agencies and research institutions regarding biosecurity

**Target Audience:** Primary Investigators, Research Directors, Laboratory Supervisors/Managers, Veterinarians, Veterinary Students, primary producers of livestock products, agriculture industry personnel (livestock feed producers, livestock processing plants, etc.), and Responsible Officials

**Audience Level:** Basic

**1:00 pm - 5:00 pm**

**8. GMO—International Perspective on Biological Safety in Agriculture**

*Sabah AlMomin, PhD, Kuwait Institute for Scientific Research, Kuwait City, Kuwait*

This course will focus on genetic engineering and GM in agriculture. Discussions will be held regarding the controversy between environment and health. Discussions will include the socio-economic impact of GM plants and the international status of GM crops. Participants will be introduced to future prospects in crop genetic engineering.

**Objectives:**

- Restate an introductory overview of genetically modified plants
- Identify the benefits and risks of a biotechnology application in agriculture
- Explain international protocols and regulations
- Discuss international perspective, status and trends

**Target Audience:** General

**Audience Level:** Basic/Intermediate

**8:00 am - 12:00 pm**

**9. APHIS Regulatory Oversight: Plant Pests, Diseases, and Imported Soil**

*Osmond Baron, PhD, United States Department of Agriculture, Riverdale, MD*

*Michael Kenney, PhD, United States Department of Agriculture, Riverdale, MD*

*Shailaja Rabindran, PhD, United States Department of Agriculture, Riverdale, MD*

This course will provide participants with an understanding of permit conditions and what conditions to include in the permit—standard conditions and those relevant to the regulated article and intended use. A review of comments from a State Plant Regulatory Official and State Plant Health Director, and comments from an applicant after he/she receives conditions to sign-off will be discussed. Other topics discussed will include the ePermit permitting process, soil permitting, containment, super-containment and the Permit Compliance Module.

**Objectives:**

- Cite the USDA APHIS permitting process for the movement (importation, interstate, and intrastate) and release of plants, plant pathogens, and biological control organisms, and for the movement of soil for chemical analysis

**Target Audience:** Scientists, Biosafety Officers, Regulatory Specialists, and those who complete permit applications

**Audience Level:** Basic/Intermediate

**1:00 pm - 5:00 pm**

**10. APHIS Permitting**

*Kirk Martin, DPM, SM(NRCM), CBSP, United States Department of Agriculture, Beltsville, MD*

*Steve Ziegenfuss, RBP, Iowa State University, Ames, IA*

The course will provide an introduction to the permits available from USDA APHIS PPQ, the permit application process, and the relevance to biosafety. Discussions will include how to identify ePermits and how they can be used by a biosafety professional to assist in compliance.

**Objectives:**

- Identify materials that may require a USDA APHIS PPQ permit for transport or possession
- Identify agencies within USDA responsible for issuing permits
- Develop an understanding of the permitting process and strategies for avoiding delays
- Identify the types of USDA permit inspections and how to prepare and respond to comments

**Target Audience:** Principal Investigators, Biosafety Specialists, and Compliance Administrators

**Audience Level:** Basic/Intermediate.

**United States Department of Agriculture, Agricultural Research Service  
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**Symposium Program**

**Monday, February 4, 2013**

5:30 pm - 7:00 pm                      Opening Reception

**Tuesday, February 5, 2013**

7:00 am - 5:00 pm                      Registration

9:00 am - 4:00 pm                      Exhibits

7:45 am - 8:00 am                      **Welcome**  
Joseph Kozlovac, MS, RBP, CBSP, United States Department of Agriculture,  
Beltsville, MD  
Edward J. Stygar, III, MBA, CAE, American Biological Safety Association,  
Mundelein, IL

**Session I**                                      **Food Safety, Defense, and Security Research and  
Biosafety/Biocontainment Challenges**  
Moderator: Joseph Kozlovac, MS, RBP, CBSP, United States Department of  
Agriculture, Beltsville, MD

8:00 am - 8:50 am                      **Keynote Address**  
Under Secretary Catherine E. Woteki, PhD, United States Department of  
Agriculture, Washington, DC

8:50 am - 9:20 am                      **Food Safety & Defense Research at Full Production Scale**  
Robert Buchanan, PhD, University of Maryland, College Park, MD

9:20 am - 9:50 am                      **Field Trials—Containment and Control**  
TBA

9:50 am - 10:20 am                      Break in Exhibit Hall

10:20 am - 10:50 am                      **FERN Network**  
Timothy McGrath, Food and Drug Administration, Rockville, MD

10:50 am - 12:10 pm                      **Foodborne Pathogens in Plants**  
Maria Brandl, PhD, United States Department of Agriculture, Albany, CA

**Case Study—Foodborne Outbreak (Cantaloupe)**  
Lawrence Goodridge, PhD, Colorado State University, Fort Collins, CO

12:10 pm - 1:30 pm                      Lunch in Exhibit Hall

## Session II

### **Containment and Research Challenges for Work on Plant Pathogens, Pests, GMOs, and Biological Control Agents**

Moderator: Dann Adair, BS, Conviron, Inc., North Branch, MN

1:30 pm - 2:00 pm

#### **Cereal Disease (Grain, Wheat Blast, UG99)**

Les Szabo, PhD, University of Minnesota, St. Paul, MN

2:00 pm - 2:30 pm

#### **APHIS Risk Assessment**

Robert Griffin, PhD, United States Department of Agriculture, Raleigh, NC

2:30 pm - 3:00 pm

Break in Exhibit Hall

3:00 pm - 3:30 pm

#### **GMOs**

Mike Firko, PhD, United States Department of Agriculture, Riverdale, MD  
Jack Okamuro, PhD, United States Department of Agriculture, Beltsville, MD

3:30 pm - 4:00 pm

#### **Containment and Security Challenges Associated with Plant Research Lab & Field**

James Stack, PhD, Kansas State University, Manhattan, KS

4:00 pm - 4:30 pm

#### **Biological Control Risk Analysis**

Ernest Delfosse, PhD, Michigan State University, East Lansing, MI

4:30 pm - 5:00 pm

#### **Emerging Issues in Biological Control and the ARS Foreign Labs**

Dan Strickman, PhD, United States Department of Agriculture, Beltsville, MD

5:30 pm - 6:30 pm

Steering Committee Members' Reception

## **Wednesday, February 6, 2013**

7:00 am - 5:00 pm

Registration

9:00 am - 4:00 pm

Exhibits

## Session III

### **Regulatory and Oversight Issues**

Moderator: Paul Meechan, PhD, RBP, CBSP, Centers for Disease Control and Prevention, Atlanta, GA

8:00 am - 8:30 pm

#### **Agroterrorism**

Seth Carus, PhD, National Defense University, Fort McNair, DC

8:30 am - 9:00 am

#### **Select Agents**

Charles Divan, PhD, United States Department of Agriculture, Beltsville, MD

9:00 am - 9:30 am

#### **Importance of a Personnel Reliability Program as Part of a Culture of Responsibility: FESAP Perspective**

Laura Kwinn, PhD, United States Department of Health and Human Services, Washington, DC

9:30 am - 10:00 am

Break



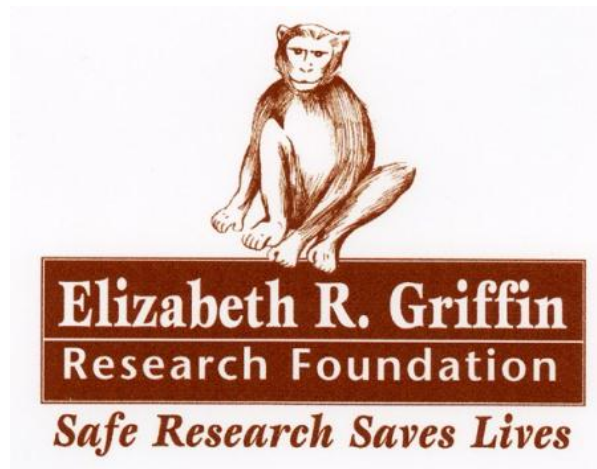
10:00 am - 12:00 pm	<p><b>Culture of Responsibility &amp; Security Roundtable</b>  Facilitator: Eileen Thacker, DVM, PhD, United States Department of Agriculture, Beltsville, MD  Presenters:  Joseph Kanabrocki, PhD, CBSP, University of Chicago, Chicago, IL  Bruce Stewart-Brown, DVM, Perdue Farms, Inc., Salisbury, MD  Edward H. You, Federal Bureau of Investigation, Washington, DC  Jason Rao, PhD, American Society for Microbiology, Washington, DC  William Mellon, PhD, University of Wisconsin—Madison, Madison, WI</p>
12:00 pm - 1:30 pm	Lunch in Exhibit Hall
1:30 pm - 2:30 pm	<b>Interactive Roundtable</b>
2:30 pm - 3:00 pm	Break
<b>Session IV</b>	<b>LAIs</b> Moderator: James Welch, Elizabeth R. Griffin Research Foundation, Kingsport, TN
3:00 pm - 3:30 pm	<b>LAI Lessons Learned and the Need for a Reporting System</b> Karen B. Byers, MS, RBP, CBSP, Dana-Farber Cancer Institute, Boston, MA
3:30 pm - 4:00 pm	<b>Occupational Health: Lab Acquired Illness, Exposure, Releases, and Consequences</b> Sue Tolin, PhD, Virginia Tech, Blacksburg, VA
4:00 pm - 5:00 pm	<b>LAIs and Breach in Containment Roundtable</b> Facilitator: Joseph Kozlovac, MS, RBP, CBSP, United States Department of Agriculture, Beltsville, MD Presenters: Susan Harper, DVM, Department of Veterans Affairs, Washington, DC Cristina Bressler, Centers for Disease Control and Prevention, Atlanta, GA Joseph Kanabrocki, PhD, CBSP, University of Chicago, Chicago, IL
6:00 pm - 10:00 pm	<b>Banquet</b> Entertainment by <i>Einstein Alive</i>
<b>Thursday, February 7, 2013</b>	
7:00 am - 5:00 pm	Registration
<b>Session V</b>	<b>Animal Health</b> Moderator: Robert Ellis, PhD, CBSP, Colorado State University, Fort Collins, CO
8:00 am - 8:50 am	<b>Keynote Address</b> Introduction: Robert Buchanan, PhD, University of Maryland, College Park, MD David Crean, MARS, Inc., McLean, VA
8:50 am - 9:20 am	<b>African Swine Fever</b> Roman Kucheryavenko, DVM, PhD, National Scientific Center, Kharkiv, Ukraine
9:20 am - 9:50 am	<b>Emerging Vector Borne Pathogens</b> Tony Schountz, PhD, University of Northern Colorado, Greeley, CO

9:50 am - 10:20 am	<b>Prion Research</b> Edward Hoover, DVM, PhD, Colorado State University, Fort Collins, CO
10:20 am - 10:35 am	Break
10:35 am - 11:05 am	<b>Field Biosafety Issues in Animal Wildlife Research</b> Sue VandeWoude, DVM, Colorado State University, Fort Collins, CO
11:05 am - 11:35 am	<b>Q-Fever</b> TBA
11:35 am	<b>Closing Comments &amp; Adjourn</b> Joseph Kozlovac, MS, RBP, CBSP, United States Department of Agriculture, Beltsville, MD

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# United States Department of Agriculture, Agricultural Research Service 2nd International Biosafety & Biocontainment Symposium

## *Agricultural Research and Response for Field and Lab*

February 4-7, 2013

Hilton Alexandria Mark Center • Alexandria, Virginia

Please print or type.

Name \_\_\_\_\_

Institution \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_

E-mail \_\_\_\_\_

Please list any special dietary requirements. \_\_\_\_\_

Circle fees of the courses you are registering.

<b>Registration Fees</b>	<b>Pre 1/7/13</b>	<b>Post 1/7/13</b>
<b>ARS Symposium</b>		
Symposium (Tuesday - Thursday) <i>(Breaks, Tuesday and Wednesday lunches, Opening Reception, and Wednesday dinner are all included.)</i>	\$675.00	\$725.00
<b>Presymposium Courses on Monday, February 4, 2013</b>		
<b>Morning Courses</b>		
Plant Pathology 101: Introduction to Principles of Plant Pathology	\$250.00	\$300.00
Integrated Pest Management & Biological Control	\$250.00	\$300.00
Biocontainment Techniques Beyond the Biosafety Cabinet	\$250.00	\$300.00
Bioterrorism Awareness for the Animal Health Community	\$250.00	\$300.00
APHIS Regulatory Oversight: Plant Pests, Diseases, and Imported Soil	\$250.00	\$300.00
<b>Afternoon Courses</b>		
Plant Research in Greenhouses and other Specialized Containment Facilities	\$250.00	\$300.00
Agrodefense and Beyond: Laboratory Response Networks	\$250.00	\$300.00
Food Defense from Farm to Fork	\$250.00	\$300.00
GMO—International Perspective on Biological Safety in Agriculture	\$250.00	\$300.00
APHIS Permitting	\$250.00	\$300.00
<b>Additional Tickets</b>		
Additional lunches	\$45.00	\$50.00
Additional Wednesday dinner	\$110.00	\$130.00
Additional Opening Reception	\$40.00	\$45.00

**Total Amount \$** \_\_\_\_\_

Credit Card Info: (circle one)    AmEx    Visa    MasterCard

Credit Card # \_\_\_\_\_ Exp Date \_\_\_\_\_

Signature \_\_\_\_\_

Notes: Cancellations postmarked after January 15, 2013 will not receive a refund. Registrations are not considered complete until payment is received.

Send registration form and payment to:

**American Biological Safety Association (ABSA)**

1200 Allanson Road, Mundelein, IL 60060-3808 • 1-866-425-1385 • 847-949-1517 • 847-566-4580 (fax) • info@absa.org • http://arssymposium.absa.org



American Biological Safety Association  
1200 Allanson Road  
Mundelein, IL 60060-3808



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