

USDA ARS 4th International Biosafety & Biocontainment Symposium: Global Biorisk Challenges — Agriculture and Beyond

February 6-9, 2017

Baltimore Convention Center ■ Baltimore, Maryland



Program



Agricultural
Research
Service

arssymposium.absa.org



ABSA
INTERNATIONAL

The Association for Biosafety and Biosecurity

Schedule of Events

Monday, February 6, 2017

| | | |
|--------------------|--|----------------------|
| 7:00 am - 5:00 pm | Registration | Sharp Street Terrace |
| 8:00 am - 5:00 pm | Current Considerations in Decontamination and Inactivation..... | 321 |
| 8:00 am - 12:00 pm | Introduction to Unique Biocontainment Challenges in Agriculture Research | 319 |
| 8:00 am - 12:00 pm | Overview of Regulations, Standards, and Guidelines..... | 318 |
| 8:00 am - 12:00 pm | International Biocontainment Challenges | 322 |
| 1:00 pm - 5:00 pm | Ag Large Animal BSL-2 Research..... | 319 |
| 1:00 pm - 5:00 pm | Facility Operational Biosafety..... | 318 |
| 1:00 pm - 5:00 pm | Institutional Governance of Life Science Operations | 322 |
| 5:30 pm - 7:30 pm | Opening Reception | 314-317 |

Tuesday, February 7, 2017

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| 7:00 am - 5:00 pm | Registration | Sharp Street Terrace |
| 8:00 am - 5:00 pm | General Session | 318-323 |
| 9:00 am - 4:00 pm | Exhibits | 314-317 |

Wednesday, February 8, 2017

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|-------------------|---------------------------------------|----------------------|
| 7:00 am - 5:00 pm | Registration | Sharp Street Terrace |
| 8:00 am - 5:00 pm | General Session | 318-323 |
| 9:00 am - 3:00 pm | Exhibits..... | 314-317 |
| 5:30 pm - 7:00 pm | Poster and Networking Reception | 316-317 |

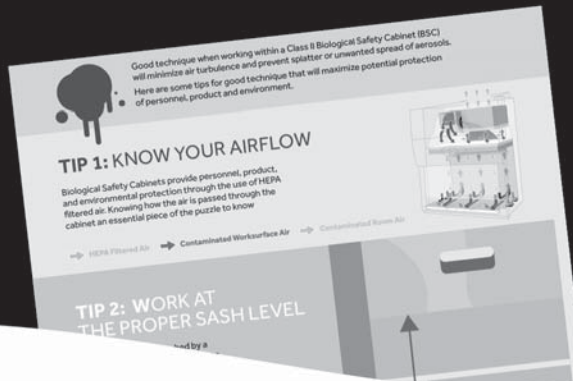
Thursday, February 9, 2017

| | | |
|--------------------|-----------------------|----------------------|
| 7:00 am - 12:00 pm | Registration | Sharp Street Terrace |
| 8:00 am - 12:00 pm | General Session | 318-323 |

TEN TIPS


FOR WORKING IN YOUR BIOSAFETY CABINET

INFOGRAPHIC




TIP 1: KNOW YOUR AIRFLOW
Biological Safety Cabinets provide personnel, product, and environmental protection through the use of HEPA filtered air. Knowing how the air is passed through the cabinet is an essential piece of the puzzle to know.

TIP 2: WORK AT THE PROPER SASH LEVEL



View online at www2.nuair.com/16242



Presymposium Courses

Monday, February 6, 2017

8:00 am - 5:00 pm

1. Current Considerations in Decontamination and Inactivation

Sherry Bohn, PhD, CBSP, University of Maryland—College Park, College Park, MD

Ashley Grant, PhD, U.S. Government Accountability Office, Washington, DC

Lori Miller, PE, U.S. Department of Agriculture, Riverdale, MD

Susan Weekly, MS, RBP, Department of Defense, Falls Church, VA

David M. White, DVM, PhD, U.S. Department of Agriculture, Ames, IA

Objectives:

- Identify risk assessment and risk mitigation procedures to use in the development of an inactivation process or disinfection program
- Describe the pros and cons of common disinfection, decontamination, and/or inactivation methods
- Discuss best practices in the development of disinfection, decontamination, and/or inactivation procedures and programs

8:00 am - 12:00 pm

2. Introduction to Unique Biocontainment Challenges in Agriculture Research

Joseph Kozlovac, MS, RBP, CBSP, U.S. Department of Agriculture, Beltsville, MD

Caird Rexroad, PhD, U.S. Department of Agriculture, Beltsville, MD

Eileen Thacker, DVM, PhD, U.S. Department of Agriculture, Athens, GA

Nick Chaplinski, MS, RBP, U.S. Department of Agriculture, Athens, GA

Objectives:

- Describe the importance of terminology as it relates to the “Biowords” (Biosafety, Biosecurity, Bioexclusion, etc.)
- Restate the difference in worker protection, public health risks vs agricultural risks and the need for a risk assessment process prior to start of work with agents which impact agriculture only
- Explain the importance of instituting an animal health monitoring program
- Identify and develop a basic understanding of operational and infrastructure challenges related to veterinary research activities related to endemic and transboundary animal diseases of agricultural significance

8:00 am - 12:00 pm

3. Overview of Regulations Standards and Guidelines

Kathryn Harris, PhD, RBP, National Institutes of Health, Rockville, MD

Freeda Isaac, DVM, U.S. Department of Agriculture, Beltsville, MD

Samuel Edwin, PhD, Centers for Disease Control and Prevention, Atlanta, GA

Mary Winkler, CSP, Smithsonian Institute, Washington, DC

Susan Harper, DVM, U.S. Department of Agriculture, Beltsville, MD

Sacha Gutierrez, MD, U.S. Food and Drug Administration, Silver Spring, MD

Objectives:

- Discuss the regulatory and policy framework that governs research activities involving hazards
- Recall how the regulatory standards apply in an agricultural research environment
- Define common compliance challenges and ways to improve accountability at your institution

8:00 am - 12:00 pm

4. International Biocontainment Challenges

Vibeke Halkjaer-Knudsen, PhD, Sandia National Laboratories, Albuquerque, NM

Mark Fitzgerald, SOTER Bioconsulting, Inc., Los Angeles, CA

Natasha Griffith, PhD, University of California—Los Angeles, Los Angeles, CA

Objectives:

- Explain the difference between prescriptive and performance based requirements
- Recognize key biocontainment challenges for institutions in lower resource countries
- Identify alternate solutions to meeting ventilation and waste disposal needs

1:00 pm - 5:00 pm

5. Ag Large Animal BSL-2 Research

Robert Ellis, PhD, CBSP, Colorado State University, Fort Collins, CO

Julie Johnson, PhD, CBSP, Kansas State University, Manhattan, KS

Objectives:

- Describe large animal ABSL-2 criteria
- Analyze risks of large animal ABSL-2 work to personnel and the environment
- Compare differences between application of ABSL-2 criteria for small lab animals and large animals (livestock, exotic species, wild animals, feral animals, etc.)
- Apply knowledge and risk assessment to develop biosafety/biosecurity protocols for specific large animal ABSL-2 circumstances (species, containment, PPE, decontamination, etc.)

1:00 pm - 5:00 pm

6. Facility Operational Biosafety

Mark Fitzgerald, SOTER Bioconsulting, Inc., Los Angeles, CA

Natasha Griffith, MS, University of California—Los Angeles, Los Angeles, CA

Vibeke Halkjaer-Knudsen, PhD, Sandia National Laboratories, Albuquerque, NM

John Henneman, MS, RBP, Pennsylvania State University, University Park, PA

Objectives:

- Restate the principles of good laboratory design and the methods for developing, analyzing and improving laboratory designs
- Summarize how building systems support laboratory functions
- List the biological containment implications of system distribution concepts
- Describe the intent of providing redundancy on engineering systems for laboratories

1:00 pm - 5:00 pm

7. Institutional Governance of Life Science Operations

Susan Harper, DVM, U.S. Department of Agriculture, Beltsville, MD

Steve Kappes, PhD, U.S. Department of Agriculture, Beltsville, MD

F. Claire Hankenson, DVM, Michigan State University, East Lansing, MI

Carl Grunfeld, MD, U.S. Department of Veterans Affairs, San Francisco, CA

Barbara Owen, MPH, RBP, CBSP, Merck & Co., Inc., Kenilworth, NJ

Objectives:

- Discuss successful initiatives designed to raise support and cultivate a positive and progressive safety culture
- Identify oversight committees that have responsibility for research worker and/or environmental safety
- Describe strategies to manage crisis situations associated with research safety
- Identify methods to prepare institutions to understand and support major international research safety initiatives

Symposium Program

Monday, February 6, 2017

5:30 pm - 7:00 pm Opening Reception

Tuesday, February 7, 2017

7:00 am - 5:00 pm Registration

9:00 am - 4:00 pm Exhibits

8:00 am - 8:15 am **USDA ARS Welcome**
Joseph Kozlovac, MS, RBP, CBSP, U.S. Department of Agriculture, Beltsville, MD

8:15 am - 8:30 am **ABSA International Welcome**
Melissa Morland, MS, MBA, RBP, CBSP, ABSA International, Mundelein, IL

8:30 am - 9:30 am **Biorisk Management Challenges in One Health World—Keynote Speaker**
Introduction: Joseph Kozlovac, MS, RBP, CBSP, U.S. Department of Agriculture, Beltsville, MD
Keith Hamilton, BVSc, Kansas State University, Manhattan, KS

Session I **Biorisk Management Challenges in One Health World**
Moderator: Jim Welch, Elizabeth R. Griffin Research Foundation, Kingsport, TN

9:30 am - 10:00 am **Enacting Changes in Malaysia**
Zalini Yunus, PhD, Ministry of Defense, Selangor, Malaysia

10:00 am - 10:30 am Break in Exhibit Hall

10:30 am - 11:00 am **Governance Structure and Cultural Changes**
Joseph Kanabrocki, PhD, University of Chicago, Chicago, IL

11:00 am - 11:30 am **ARS Culture Change**
Steven Kappes, PhD, U.S. Department of Agriculture, Beltsville, MD

11:30 am - 12:00 pm **Management Leadership Culture Change**
Mansour Samadpour, PhD, IEH Analytical Laboratories, Seattle, WA

12:00 pm - 12:20 pm **Biorisk Management Challenges Roundtable**
Panelists: Zalini Yunus, PhD, Ministry of Defense, Selangor, Malaysia; Joseph Kanabrocki, PhD, University of Chicago, Chicago, IL; Steven Kappes, PhD, U.S. Department of Agriculture, Beltsville, MD; Joseph Kozlovac, MS, RBP, CBSP, U.S. Department of Agriculture, Beltsville, MD; John Balog, RBP, U.S. Food and Drug Administration, Silver Spring, MD; Paul Meechan, PhD, RBP, CBSP, Centers for Disease Control and Prevention, Atlanta, GA

12:20 pm - 2:00 pm Lunch in Exhibit Hall

Session II **Arthropods**
Moderator: Robert Ellis, PhD, CBSP, Colorado State University, Fort Collins, CO

2:00 pm - 2:30 pm **One Health Issues Related to Arthropod-borne Diseases**
Dan Strickman, PhD, Bill & Melinda Gates Foundation, Seattle, WA

| | |
|-------------------|--|
| 2:30 pm - 3:00 pm | Arthropod Containment Guidelines Ann Powers, PhD, National Center for Emerging and Zoonotic Infectious Diseases, Fort Collins, CO |
| 3:00 pm - 3:30 pm | Break in Exhibit Hall |
| 3:30 pm - 4:00 pm | Arthropod Containment in Plant Research Jian Duan, PhD, U.S. Department of Agriculture, Newark, NJ |
| 4:00 pm - 5:00 pm | Arthropod Control Panel—Methodologies Past & Present David O'Brochta, PhD, University of Maryland—College Park, College Park, MD |

Wednesday, February 8, 2017

| | |
|---------------------|--|
| 7:00 am - 5:00 pm | Registration |
| 9:00 am - 4:00 pm | Exhibits |
| Session III | High Pathogen Avian Influenza Moderator: Josh Bornstein, U.S. Department of Agriculture, Washington, DC |
| 8:00 am - 8:30 pm | HPAI: Introduction to the Agent, Disease, and Biology David Swayne, DVM, PhD, U.S. Department of Agriculture, Athens, GA |
| 8:30 am - 9:00 am | Disaster Response Jonathan Zack, DVM, U.S. Department of Agriculture, Riverdale, MD |
| 9:00 am - 9:30 am | Worker Protection and Occupational Health Thomas Walker, MD, U.S. Department of Agriculture, Ames, IA |
| 9:30 am - 10:00 am | Break in Exhibit Hall |
| 10:00 am - 10:30 am | Decontamination & Depopulation Issues Kenneth Hays, U.S. Environmental Services, Jackson, MS |
| 10:30 am - 11:00 am | Economic Impact Matthew MacLachlan, PhD, U.S. Department of Agriculture, Washington, DC |
| 11:00 am - 11:30 am | Industry Lessons Learned Oscar Garrison, United Egg Producers, Alpharetta, GA |
| 11:30 am - 12:00 pm | International Perspective on HPAI David Swayne, DVM, PhD, U.S. Department of Agriculture, Athens, GA |
| 12:00 pm - 1:15 pm | Lunch in Exhibit Hall |
| Session IV | Laboratory Assessment Programs and Tools Moderator: Jen Gaudioso, PhD, Sandia National Laboratories, Albuquerque, NM |
| 1:15 pm - 1:45 pm | GHSA Assessment for a U.S. Perspective Joseph Anelli, DVM, U.S. Department of Agriculture, Riverdale, MD |
| 1:45 pm - 2:15 pm | Food and Agriculture Organization of the United Nations Laboratory Mapping Tool Sharon Hietala, PhD, University of California—Davis, Davis, CA |

- 2:15 pm - 2:45 pm Break in Exhibit Hall
- 2:45 pm - 3:15 pm **Rinderpest Inspections**
Keith Hamilton, BVSc, Kansas State University, Manhattan, KS
- 3:15 pm - 5:00 pm **Laboratory Assessment Programs Roundtable**
Panelists: Christina Thompson, RBP, CBSP, Thompson Biosafety, LLC, Greenfield, IN; Robert Ellis, PhD, CBSP, Colorado State University, Fort Collins, CO; Sharon Hietala, PhD, University of California—Davis, Davis, CA; Joseph Awuni, DVM, Accra Veterinary Laboratory, Accra, Ghana; Keith Hamilton, BVSc, Kansas State University, Manhattan, KS; Diana Whipple, USDA ARS, Ames, IA; Susan Weekly, MS, RBP, Department of Defense, Falls Church, VA
- 5:30 pm - 7:00 pm **Poster and Networking Reception**

Thursday, February 9, 2017

- 7:00 am - 5:00 pm Registration
- 8:00 am - 8:10 am **Announcement of Poster Awards**
Hank Parker, PhD, Georgetown University, Washington, DC
- Session V**
- Risk Assessment**
Moderator: Sherry Bohn, PhD, CBSP, University of Maryland—College Park, College Park, MD
- 8:10 am - 9:10 am **Considerations in Risk Assessment—Keynote Speaker**
Rocco Casagrande, PhD, Gryphon Scientific, Takoma Park, MD
- 9:10 am - 9:40 am **Field Biorisk Management**
Scott Patlovich, DrPH, CBSP, University of Texas Health Science Center—Houston, Houston, TX
- 9:40 am - 10:10 am **Facts from Fiction: Communicating Risk to the Lay Public**
Hank Parker, PhD, Georgetown University, Washington, DC
- 10:10 am - 10:30 am Break
- 10:30 am - 11:00 am **BioRam Tool**
Marcus Kehrl, Jr., DVM, PhD, U.S. Department of Agriculture, Ames, IA
- 11:00 am - 11:30 am **One Health Risk Assessment**
Anna Allen, DVM, North Carolina Department of Agriculture and Consumer Services, Raleigh, NC
- 11:30 am - 12:30 pm **USDA Response to 2016 New World Screwworm Outbreak in the Florida Keys**
Adalberto Pérez de León, DVM, PhD, U.S. Department of Agriculture, Kerrville, TX; Joanna Davis, DVM, U.S. Department of Agriculture, Tifton, GA
- 12:30 pm **Closing Comments & Adjourn**
Joseph Kozlovac, MS, RBP, CBSP, U.S. Department of Agriculture, Beltsville, MD

Posters

Development of the PCR Protocol for Detection of *F. Tularensis* in Environmental and Clinical Samples (48)

A.P. Gerilovych, B.T. Stegnyy, O.S. Solodiankin, O. Zlenko, National Scientific Center—Institute of Experimental and Clinical Veterinary Medicine (NSC IECVM), Kharkov, Ukraine

Development of the Biosafety and Biosecurity Policy in NSC IECVM (49)

B.T. Stegnyy, A.P. Gerilovych, I.S. Danylova, O.V. Obukhovska, M. Yu Stegnyy, O.S. Solodiankin, National Scientific Center—Institute of Experimental and Clinical Veterinary Medicine (NSC IECVM), Kharkov, Ukraine

Analysis of Biological Risks of Tularemia in the Eastern and Southern Regions of Ukraine (50)

V.I. Bolotin, O.B. Zlenko, B.T. Stegnyy, O.S. Solodiankin, A.P. Gerilovych, National Scientific Center—Institute of Experimental and Clinical Veterinary Medicine (NSC IECVM), Kharkov, Ukraine

Compliance to Personal Protective Equipment Against Avian Influenza Among Poultry Handlers

Mostafa Abbas, Lamiaa Fiala, Suez Canal University, Ismailia, Egypt; Ahmed M. Abbas, Ministry of Health, Cairo, Egypt

Equine Facility Biosafety: Challenges and Lessons Learned from Large Animal BSL-2 Containment (53)

Delena W. Mazzetti, Brandy Nelson, University of Kentucky, Lexington, KY

Monitoring Studies of Aujeszky Disease Virus Circulation in Wild Pigs in the Ukraine (55)

Muzykina Larysa, Mandygra, Svitlana, Halka, Ihor, Sytiuk, Mykola, Nychyk, Serghiy, Ayshpur, Olena, Institute of Veterinary Medicine of the National Academy of Agrarian Sciences, Kiev, Ukraine

Vaccine-Induced Immune Response Against Bovine Leukemia Virus (56)

Svitlana Mandygra, Ihor Halka, Larysa Muzykina, Nychyk Serghiy, Mykola Mandyhra, Institute of Veterinary Medicine of the National Academy of Agrarian Sciences, Kiev, Ukraine

Detection of T-2 Toxin Producing Fungi in Feed in the Ukraine (59)

Olga Vasianovych, Yulia Yangol, Serhiy Nychyk, Natalia Gudz, Institute of Veterinary Medicine of the National Academy of Agrarian Sciences, Kiev, Ukraine

Biorisk Analysis and Staff Protection When Working with Rabies Virus in the Laboratory (60)

Ivan Polupan, Alina Nikitova, Serhiy Nychyk, Andriy Rozumniuk, Institute of Veterinary Medicine of the National Academy of Agrarian Sciences, Kiev, Ukraine

Biorisk Regarding Bacterial Infections of Pigs in the Ukraine and Means of Their Control (61)

Olga Gorbatiuk, Tetaina Ukhovska, Valentyna Andriyashuk, Oleksandr Zhovnir, Natalia Gudz, Institute of Veterinary Medicine of the National Academy of Agrarian Sciences, Kiev, Ukraine

Ukraine is the Unique Region for the Research of Ecology, Antigenic and Genetic Diversity of Avian Influenza Viruses and Paramyxoviruses Which Circulate Among Wild Birds in Eurasia (63)

Muzyka Denys, Oleksandr Rula, Borys Stegnyy, National Scientific Center Institute of Experimental and Clinical Veterinary Medicine (NSC IECVM), Kharkiv, Ukraine; Mary Pantin-Jackwood, Erica Spackman, Claudio Afonso, U.S. Department of Agriculture, Athens, GA

The Immune Response in Chicken Against the Infection with Low-Pathogenic Influenza Viruses of H4N6, H13N8, H13N2 Subtypes That Had Been Isolated from Wild Birds of Different Ecological Groups (64)

Oleksandr Rula, Muzyka Denys, Stegnyy Anton, Gerilovych Anton, Borys Stegnyy, National Scientific Center Institute of Experimental and Clinical Veterinary Medicine (NSC IECVM), Kharkiv, Ukraine; Hyun Lillehoj, Beltsville Agricultural Research Center, Beltsville, MD

Development and Implementation of a High-Quality Test System for Immunochromatographic Analysis for ASF Field Diagnosis (67)

S. Nychyk, M. Sytiuk, I. Halka, N. Gudz, S. Mihalap, D. Korol, O. Nebeschuk, V. Spyrydonov, Institute of Veterinary Medicine of the National Academy of Agrarian Sciences, Kiev, Ukraine

Epizootological Monitoring of Wild Pigs Viral Disease in the Ukraine (68)

S. Nychyk, M. Sytiuk, I. Halka, N. Gudz, P. Sharandak, A. Kovalenko, M. Sytiuk, I. Halka, N. Gudz, P. Sharandak, A. Kovalenko, Institute of Veterinary Medicine of the National Academy of Agrarian Sciences, Kiev, Ukraine

Using a One Health Approach to Prevent Bucellosis in Georgia (69)

Neli Khizanishvili, National Food Agency, Telavi, Georgia; Merab Ososhvili, National Center for Disease Control, Laboratory of the Ministry of Agriculture, Gurjaani, Georgia; Tea Glonti, Battelle Memorial Institute, Tbilisi, Georgia

Use of Standardized Electronic Tools for Harmonized Data Collection Across Multiple Countries and Projects (71)

Martin Adams, Global Scientific Solutions for Health, Baltimore, MD

Biorisk Assessment of Rabies Challenge Virus (CVS Strain) Preparation in Laminar Air Flow Cabinet (72)

Mohamed Samy Mohamed Abousenna, Central Laboratory for Evaluation of Veterinary Biologics, Cairo, Egypt

Improvement of the Disinfectant Program Used for Control of *Brucella Meltensis* in the Laboratory and Animal Houses in CLEVB (73)

Rafik Hamed Sayed, Central Laboratory for Evaluation of Veterinary Biologics, Cairo, Egypt

Analysis on the Use of Supply HEPA Filters vs Supply Bioseal Dampers (74)

Chris Kiley, Eric Bratt, Merrick & Company, Duluth, GA

Development and Introduction of Diagnostic Test Kit for Detection of Antibodies to Newcastle Disease Virus (76)

Oksana F. Blotska, State Science-Control Institute of Biotechnology and Strains of Microorganisms, Kiev, Ukraine

The Emergent Situation with Regard to African Swine Fever in the Ukraine 2012-2016 (77)

Oksana F. Blotska, Zinaida S. Klestova, Mykhailo V. Babkin, Oleg M. Deriabin, Zinaida S. Klestova, State Science-Control Institute of Biotechnology and Strains of Microorganisms, Kiev, Ukraine

Campaign for Rising Awareness in Biorisk Management in Health Care and Veterinary Facilities in Georgia: Introduction of Educational Programs in Biosafety and Bioethics at Agricultural University of Georgia (78)

Lela Bakanidze, Mariam Natsvlishvili, National Center for Disease Control, Tbilisi, Georgia

The Containment Measures and Challenges to Prevent Release of RVFV During the Evaluation of RVF Vaccines Inside Laboratory and Animal Facilities (79)

Maged Mounir Ibrahim, Central Laboratory for Evaluation of Veterinary Biologics, Cairo, Egypt

Integrated Consortium of Laboratory Networks (80)

Betsie Chacko, Department of Homeland Security, Washington, DC

A Case Study: Risk Assessment of High Virus Diagnosis in Tunisia (81)

Aana Masmoudi, Institut Pasteur de Tunis, Belvedere, Tunisia

Veterinary Biorisk Management Training: An Experience from the Philippines (82)

Rohani Cena, Raul Destura, Angelo dela Tonga, University of the Philippines, Manila, Philippines

Laboratory Safety Assessment Tool (85)

Jessie Dugan Barrett, U.S. Department of Agriculture, Athens, GA

What Goes Around Comes Around—Lyme Disease in Humans: Climate Change and Other Human Interventions Causing Wildlife Population Shifts Ultimately Have an Impact on Public Health (84)

Mireille Plamondon, Hospital du Haut-Richelieu, Richelieu, Quebec, Canada

Biosafety and Biosecurity Risks Associated with the Veterinary Profession and Veterinary Practices in the Republic of Ghana (86)

Joannishka Kuokor Dsani, Accra Veterinary Laboratory, Accra, Ghana

Steering Committee

John Balog, RBP
Sherry Bohn, PhD, CBSP
Josh Bornstein
Patricia Delarosa, PhD, RBP, CBSP
Robert Ellis, PhD, CBSP
Eilyn Fabregas, RBP
Jennifer Gaudio, PhD
Susan Harper, DVM
Joseph Kozlovac, MS, RBP, CBSP

Paul Meechan, PhD, RBP, CBSP
Melissa Morland, MS, MBA, RBP, CBSP
Hank Parker, PhD
Melanie Peterson
Caird Rexroad, PhD
Martha Stokes, PhD
Dariusz Sweitkleik
Eileen Thacker, DVM, PhD
James Welch

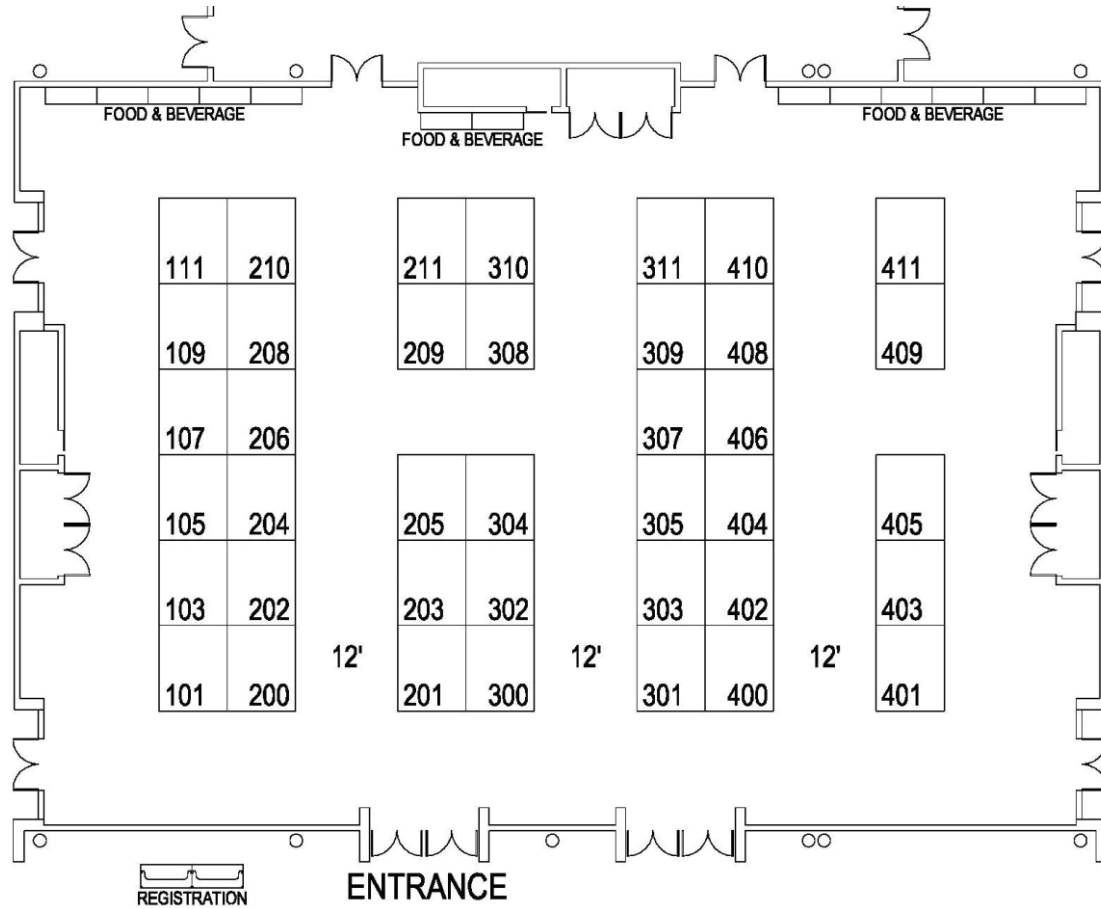
Managing Partner
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Principal Partner
Elizabeth R. Griffin Research Foundation



Exhibitor Floor Plan



| Exhibitor | Booth |
|--|-------|
| ABSA International | 402 |
| Allentown, Inc. | 400 |
| Arcoplast, Inc. | 210 |
| Art's-Way Scientific, Inc. | 101 |
| a-tune software, Inc. | 200 |
| Baker | 204 |
| Biosafety and Biosecurity Training Course (BBTC) | 307 |
| ChABSA | 406 |
| ClorDiSys Solutions, Inc. | 201 |
| DRS Laboratories, Inc. | 209 |
| ENV Services, Inc. | 310 |
| Federal Select Agent Program/CDC DSAT | 303 |
| Germfree Laboratories, Inc. | 202 |

| Exhibitor | Booth |
|---|-------|
| Life Science Products—Interior Finishes | 105 |
| Life Science Products—PPE | 107 |
| MAXAIR Systems | 302 |
| McCarthy Building Companies, Inc. | 304 |
| Merrick & Company | 311 |
| Micro-Clean | 203 |
| NBBTP | 309 |
| NuAire, Inc. | 211 |
| Oxford Nanopore Technologies, Ltd. | 301 |
| PRI Bio | 205 |
| TOMI Environmental Solutions, Inc. | 300 |
| USDA ARS | 404 |
| WSP Parsons Brinckerhoff | 308 |

Exhibitors

ABSA International, Mundelein, IL
Booth 402
www.absa.org

Allentown, Inc., Allentown, NJ
Booth 400
Allentown has been developing innovative animal housing solutions for over 47 years. We assist our clients through facility design, layout, and installation. Our products include IVC Systems, Bio-Containment IVC Systems, Biological Work Stations, Animal Transport Units, Multi Species Housing, Wireless IVC monitoring, and Sentinel™ EAD™ Colony Health Monitoring (patent pending).
www.allentowninc.com

Arcoplast, Inc., St. Peters, MO
Booth 210
Arcoplast offers design options in barrier construction for high-containment facilities that meet BSL-3, BSL-4, and USDA ARS 242.1 BSL-3Ag including NIH, CDC, NIAID and USP 797 construction design guidelines.
www.arcoplast.com

Art's-Way Scientific, Inc., Monona, IA
Booth 101
Art's Way Scientific manufactures and installs custom modular facilities for laboratory animal research, biocontainment, triage, public health, and general laboratory requirements. Modular units are custom configured to your research requirements. Modular buildings are delivered in less time to keep your research moving. Consider Modular for your research space.
www.artsway-scientific.com

a-tune software, Inc., Round Rock, TX
Booth 200
a-tune's software medical research suite, tick@lab provides compliance management for IACUC, IRB, and IBC. Applications are available for Protocol Management, Transgenic Breeding, Capacity Planning, Task Management, Accounting, Facility Management, and Vet Records. User defined templates accommodate collection of specific data for your institution. A Data Mart allows reporting and integration.
www.a-tune.com

Baker, Sanford, ME
Booth 204
For more than 60 years, Baker has helped advance science, discovery and clinical care by pioneering innovative solutions for air containment, contamination control and controlled environments. Baker biological safety cabinets, clean benches, fume hoods, and pharmacy isolators provide unparalleled user and product protection for a variety of applications.
www.bakerco.com

Biosafety and Biosecurity Training Course (BBTC), Fort Collins, CO
Booth 307
Biosafety and Biosecurity Training Course is presented by 20 subject matter expert. Included are laboratory animal, large animal, non-human primates, veterinary clinics (ABSL-2,-3,-4; 2 days); rDNA, records, inspections, risk management, insectaries, human health clinics (BSL-1,-2,-3; 2-1/2 days); plant research, diagnostics, permits, greenhouses (BSL-1, 2, 3; 2 days).
www.bbtcfortcollins.com

Chesapeake Area Biological Safety Association (ChABSA), Gaithersburg, MD
Booth 406
www.chabsa.org

ClorDiSys Solutions, Inc., Lebanon, NJ

Booth 201

ClorDiSys Solutions is a worldwide leader in contamination control with solutions using chlorine dioxide gas and ultraviolet light. Chlorine dioxide gas is the safest and most effective method for decontamination available today, while UV light provides powerful disinfection. ClorDiSys offers Decontamination/Disinfection Equipment along with providing Decontamination Services.

www.clordisys.com

DRS Laboratories, Lehigh Valley, PA

Booth 209

DRS; an OEM of ClO₂ Decontamination Equipment. DRS's MCS (Mini CD System) is the front-runner for all BSC and space volumes up to 2,700cf. With our highly skilled/trained group, we lead in all types of small to large Decontamination Services, utilizing the most cost effective methodology required at your facility.

www.drslaboratories.com

ENV Services, Inc., Hatfield, PA

Booth 310

ENV Services is pleased to announce that we are ISO 17025 accredited in both controlled environment testing and calibration. We provide calibration, validation, certification, cleanroom testing, and decontamination services on a nationwide level to all industries such as healthcare, pharmaceutical, industrial, medical device, academic, and biotechnology.

www.envservices.com

Federal Select Agent Program/CDC DSAT, Atlanta, GA

Booth 303

The FSAP/CDC DSAT regulates the possession, use, and transfer of biological agents and toxins that could pose a severe threat to public health and safety. The program promotes laboratory safety and security by enforcing select agent regulations, providing guidance to the regulated community, and inspecting select agent facilities.

www.selectagents.gov

Germfree Laboratories, Inc., Ormond Beach, FL

Booth 202

Germfree designs, engineers, and manufactures laboratory equipment, hospital pharmacy equipment, and turnkey mobile and modular labs. Germfree's Class III Biosafety Cabinets provide containment in the world's most advanced laboratories. Germfree systems have been purchased by more than 6,000 institutions and companies in the U.S. and 60 other countries worldwide.

www.germfree.com

Life Science Products, Inc.—Interior Finishes, Chestertown, MD

Booth 105

LSP has been providing the highest levels of hygienic interior surfaces for Biosafety and Biocontainment for over 40 years. Our resinous flooring systems, composite wall panels and ceilings systems, coatings, hygienic doors and wall protection all meet and exceed the highest levels of containment, durability, chemical resistance and sustainability.

www.lspinc.com

Life Science Products, Inc.—PPE, Chestertown, MD

Booth 107

LSP is a manufacturer and provider of a full-range of Personal Protection Clothing and accessories. Our manufacturing standards and innovations provide improved levels of personal protection. From Shoecovers to Powered Air-Purifying Respirators, LSP is your one-stop source for all your Biosafety and Biocontainment personal protection requirements.

www.lspinc.com

MAXAIR Systems, Irvine, CA

Booth 302

MAXAIR Systems leads in developing advanced PPE for use in healthcare. The MAXAIR CAPR System provides unique advantages in user comfort and convenience, and overall affordability while optimizing respiratory and contact protection for healthcare workers.

www.maxair-systems.com

McCarthy Building Companies, Inc., Atlanta, GA

Booth 304

McCarthy Building Companies is the oldest privately held national construction company in the country with over 150 years spent solving complex building challenges. McCarthy utilizes industry-leading design phase and construction techniques combined with value-add technology to maximize project outcomes. McCarthy consistently ranks amongst the top 20 general contractors.

www.mccarthy.com

Merrick & Company, Denver, CO

Booth 311

Merrick is an international firm with over 500 employees located throughout North America and Europe. Merrick provides full-service architecture, engineering, commissioning, and O&M services to clients including federal, institutional, and private sector clients. Merrick has been a single-source provider of services for research, analytical, and high-containment facilities for over 25 years.

www.merrick.com

Micro-Clean, Bethlehem, PA

Booth 203

Micro-Clean, a division of STERIS Corporation. Providing Cleanroom Certification, Replacement Parts, ASHRAE 110 Testing, Calibration, CD & VHP Decontamination, USP 797 Solutions, Compressed Air Line Testing, Environmental Monitoring and Qualification Services.

www.microcln.com

National Biosafety and Biocontainment Training Program (NBBTP), Bethesda, MD

Booth 309

NBBTP Fellowship is a 2-year post-baccalaureate and post-doctorate immersive biosafety training experience open to U.S. citizens, permanent residents, or U.S. Nationals. The program includes traditional lectures, reading assignments, mentoring projects, and travel to conferences and training sessions. The NBBTP is a partnership between the DOHS and NIAID at the NIH.

www.nbbtp.org

NuAire, Inc., Plymouth, MN

Booth 211

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Oxford Nanopore Technologies, Ltd., Oxford, Oxon, United Kingdom

Booth 301

Oxford Nanopore Technologies is developing and commercializing a new generation of nanopore-based electronic systems for analysis of single molecules, including DNA, RNA, and proteins. The handheld MinION™ device and the high-throughput PromethION™ are designed to provide simplicity of workflows and real-time data streaming.

www.nanoporetech.com

PRI Bio, Dupo, IL
Booth 205

PRI Bio is the industry leader and expert in Bio-Waste Management Solutions, providing innovative equipment and proven technologies for Carcass and Effluent Sterilization to the world's most prestigious BSL-4, BSL-3, BSL-3Ag, BSL-2 laboratories, hospitals, research facilities, and bio-pharma companies with systems in 35 countries.
www.pri-bio.com

TOMI Environmental Solutions, Inc., Frederick, MD
Booth 300

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www.tomimist.com

USDA ARS, Beltsville, MD
Booth 404

The Agricultural Research Service (ARS) is the U.S. Department of Agriculture's (USDA) chief in-house scientific research agency. Each day, more than 2,000 ARS scientists at 90 laboratories throughout the country discover real-world solutions to America's agricultural needs.
www.ars.usda.gov

WSP | Parsons Brinckerhoff, Atlanta, GA
Booth 308

WSP provides integrated professional engineering design services for the built and natural environment. Our Science + Technology group provides expertise in mechanical, electrical, and plumbing engineering, lab planning + design, structural, fire protection, and commissioning on large-scale projects involving biomedical research, academic, pharmaceutical and medical research laboratories, and animal facilities.
www.wsp-pb.com

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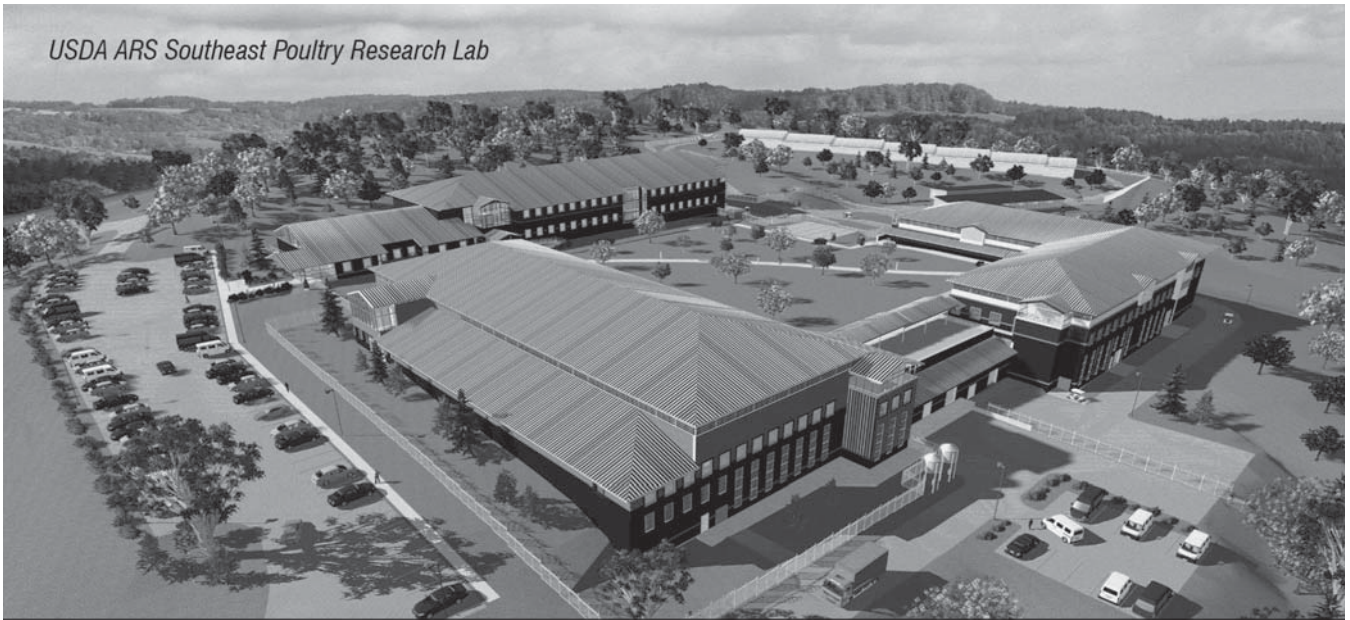
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