

Focus Area Presentation

Institutional Policies and Inter-Agency Interactions

**Regional Workshop to Assess
Research and Outreach
Needs in Integrated Pest
Management to Reduce the
Incidence of Tick-Borne
Diseases in the Southern US**

Presenters: Dan Strickman (USDA) and Ben Beard (CDC)

Institutions Represented

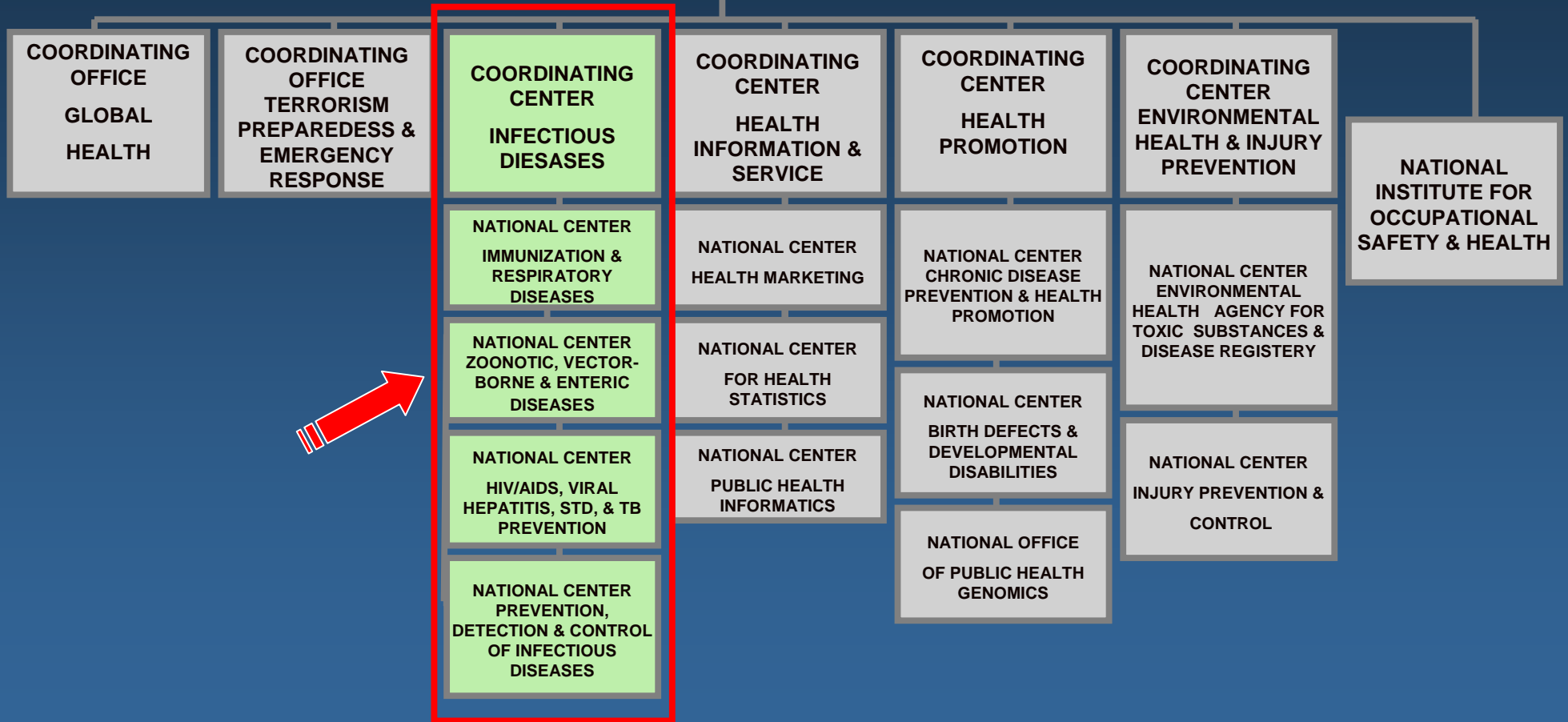
- CDC
- DoD
- EPA
- FDA
- LDA
- NCDHHS
- NIH
- NPS
- USDA
- UI

Questions Addressed

- 1) Agency mission with TBDs?
- 2) Agency responsibilities and mandates?
- 3) Current goals, activities, and investments?
- 4) Key partners, collaborators, and stakeholders?
- 5) Agency efforts that cross-cut human, livestock, and wildlife disease concerns?
- 6) Key issues and concerns to be addressed within the focus group?

Institutional Overviews

CDC OFFICE OF THE DIRECTOR



NATIONAL CENTER FOR ZOO NOTIC, VECTOR-BORNE, & ENTERIC DISEASES

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Sarah Wiley
Associate Director for Policy

Peter Bloland
Associate Director for Global Health

Carol Rubin
Senior Advisor for Influenza

Sam Nelson
Budget Analyst

Office of the Director

Lonnie J. King
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Ali S. Khan
Deputy Director

Doug Browne
Management Official

J. Michael (Mike) Miller
Associate Director for Science

Embedded Associate Directors

Tracee Treadwell
Zoonotic Diseases

Charles (Ben) Beard
Vector-borne Diseases

Michael Beach
Healthy Water

Food Safety Office

Art Liang
Director

Division of Parasitic Diseases

Mark Eberhard
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Kay Lawton
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Patricia Wilkins, ADLS

Chris Braden, ADS

Division of Vector-Borne Infectious Diseases

Lyle Petersen
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Mary (Mel) Fernandez
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Ronald Rosenberg
ADS

Division of Viral & Rickettsial Diseases

Steve Monroe
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Deymon Fleming
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Ermias Belay*, ADES

Cynthia Goldsmith*, ADLS

Division of Foodborne, Bacterial, & Mycotic Diseases

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Dan Cameron*
Management Officer

Patricia Fields, ADLS

Office of Critical Information Integration & Exchange

Virginia Lee*
Director

Rich Schieber*
Senior Medical Advisor

Dave Crowder
Management Official

Malaria Branch
Laurence Slutsker

Arboviral Diseases Branch
Roger Nasci

Rickettsial Zoonoses Branch
Robert Massung

Enteric Diseases Laboratory Branch
Peter Gerner-Smid

Situation Awareness Branch**
David Walker*

Parasitic Diseases Branch
Monica Parise

Bacterial Diseases Branch
Charles (Ben) Beard

Special Pathogens Branch
Thomas Ksiazek

Enteric Diseases Epidemiology Branch
Patricia Griffin

Information Integration and Exchange Branch**
Henry Rolka*

Entomology Branch
Robert Wirtz

Dengue Branch
Kay Tomaszek*

Infectious Diseases Pathology Branch
Sherif Zaki

Bacterial Zoonoses Branch
Theresa Smith*



Poxvirus and Rabies Branch
Inger Damon

Mycotic Diseases Branch
Mary Brandt

Chronic Viral Diseases Branch
William Reeves

Primary CDC Programs for TBDs

Program	Location	Agents
 DVRD/RZB	Atlanta	<i>Rickettsia</i> , <i>Anaplasma</i> , <i>Ehrlichia</i>
DPD/PDB	Chamblee	<i>Babesia</i>
 DVVID/BDB	Fort Collins	<i>Borrelia</i> , STARI

CDC – BDB Mission Statement

**To promote health and quality of life by
preventing and controlling vector-borne
bacterial diseases**

Nation's lead federal prevention agency for
human disease

BDB Key Mandated Activities

- *Conduct* multidisciplinary public health-oriented research aimed at developing effective disease prevention and control measures
- *Coordinate* nation-wide surveillance
- *Investigate* disease outbreaks in both national and international settings
- *Serve* as the national reference diagnostic laboratory and WHO Collaborating Center
- *Provide* science-based guidance and recommendations for prevention and control of both natural and intentional disease outbreaks
- *Train* students, fellows, and public health practitioners for the purpose of diagnosing, preventing, and investigating vector-borne diseases
- *Collaborate* with universities, industry, and public health partners in promoting sound disease prevention policies and practices

Lyme Disease Program Goals

1. Develop and/or partner in developing an effective reservoir-targeting vaccine program for community Lyme disease prevention
2. Work closely with state DsOH in assessing strengths, limitations, and challenges in Lyme disease surveillance and optimizing surveillance practices
3. Work with FDA, universities, and industry to develop and/or evaluate improved diagnostic tests
4. Develop and evaluate natural product insecticides and repellants and other prevention approaches for control of ticks and Lyme disease
5. Develop effective programs for educating physicians and patients on Lyme disease diagnosis, treatment, and prevention
6. Establish regional TBD research centers for gathering detailed information on physician and patient knowledge and practices and for evaluating specific intervention approaches and activities (TickNet)
7. Establish positive working relationships with other federal agencies, state health departments, patient advocacy groups, universities, and industry

CDC – RZB Mission Statement

To improve public health nationally and internationally through the diagnosis, prevention, and control of disease, disability, and death caused by suspected and known rickettsial, *Bartonella*, and *Coxiella* infections

Nation's lead federal prevention agency for human disease

RZB Key Mandated Activities

- **Provide** epidemic aid, consultation, surveillance, and epidemiologic or ecologic investigations of rickettsial and *Bartonella*-associated zoonoses domestically and internationally;
- **Conduct** studies on the microbiology, molecular biology, and pathogenesis of rickettsial and *Bartonella*-associated zoonotic infections;
- **Provide** reference/diagnostic services domestically and internationally;
- **Develop**, evaluate, and improve methods and reagents for diagnosing rickettsial and *Bartonella*-associated diseases;
- **Serve** as a WHO Collaborating Center for Rickettsial and *Bartonella*-associated Reference and Research;
- **Provide** consultation and laboratory training to state and local health departments and other national and international organizations;
- **Respond** to requests for information regarding rickettsial and *Bartonella*-associated zoonotic diseases and their prevention from CDC, health care providers, academic institutions, state and local health departments, other government agencies, and the general public;
- **Collaborate** with government agencies, domestic and international academic institutions, and the private sector in developing novel diagnostic assays and vaccines for rickettsial and *Bartonella*-associated zoonotic diseases and
- **Maintain** the Q Fever Laboratory and Select Agent activities for *Coxiella burnetii*, *Rickettsia rickettsii*, and *Rickettsia prowazekii* for bioterrorism preparation, response, and research.
- **Provide** primary isolation, identification, and characterization of hazardous rickettsial agents that require biosafety level 3 laboratory conditions for their safe handling.

RZB Program Goals

1. Enhance surveillance activities (both active and passive) to better understand the burden of disease in the United States and internationally
2. Improve the sensitivity and specificity of molecular, biological, and serological diagnostic assays
3. Identify and characterize newly emerging or newly recognized pathogens (pathogen discovery)
4. Improve public health infrastructure and communication (to physicians, public health officials, public) to enhance the awareness, diagnosis, and reporting of disease
5. Investigate the reservoirs and vectors for human disease agents, and evaluate their impact on public health and potential control measures
6. Increase collaborations with state, federal, and academic partners to develop effective prevention tools and measures

Key CDC Partners

- State health departments and CSTE (surveillance related activities)
- Other federal agencies
 - NIH (program synergy and collaboration)
 - EPA (insecticide and repellent development and evaluation)
 - FDA (Diagnostic test development and evaluation)
 - DoD (R&D, product evaluation)
 - USDA (zoonotic disease surveillance, R&D)
 - NPS (outbreak investigation, occupational risk assessment)
- Industry (product development: RTVs, insecticides, repellants, diagnostics)
- Patient support and advocacy groups (joint education efforts)

CDC Efforts that Cross-cut Human, Livestock, and Wildlife Disease Concerns

- Work closely with state PH Veterinarians regarding zoonoses efforts (investigations, surveillance)
- Collaborate on interagency zoonoses issues
 - NPS (outbreak investigations)
 - USDA (animal surveillance)
- Promote *One Health* concept with AVMA and other partners (people, animals, and the environment)

Department of Defense – Mission with respect to vector-borne diseases

To protect the health of its
members

DoD – Key Responsibilities and Activities

Operational

- Policy development and implementation by AFPMB (e.g., TIG 26: Tick Control and Tick Borne Diseases, Tick ID CD, etc., www.afpmb.org)
- Technical guidance and surveillance from service specific preventive medicine centers
 - US Army Center for Health Promotion and Preventive Medicine (includes extensive PCR of ticks from patients)
 - US Navy and Marine Corps Public Health Center
 - US Air Force School of Aerospace Medicine
- Action by a variety of assets

DoD – Key Responsibilities and Activities (continued)

- Research
 - US Army is lead agency for medical entomology research
 - Army labs: WRAIR, USAMRIID, AFRIMS, USAMRU-K, Georgia?
 - Navy labs: NAMRU-2 (Jakarta), NAMRU-3 (Cairo), NMRC-Det (Lima)
 - US Navy performs operational entomology research independently at NECE (Jacksonville)
 - DWFP funds research at USDA ARS (\$3M) and competitive grants (\$1.75M) on pesticides, personal protection, and application. Primary focus on mosquito-borne diseases.

AFPMB - Mission

MISSION: The Armed Forces Pest Management Board (AFPMB) recommends policy, provides guidance, and coordinates the exchange of information on all matters related to pest management throughout the Department of Defense (DoD). The AFPMB's mission is to ensure that environmentally sound and effective programs are present to prevent pests and disease vectors from adversely affecting DoD operations.

AFPMB – Key Activities

- Develops and recommends policy to the Under Secretary of Defense for Acquisition, Technology and Logistics.
- Coordinates pest management activities in the DoD.
- Develops issues, and maintains manuals and other guidance necessary to implement the technical requirements of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).
- Implements the DoD plan for Certification of Pesticide Applicators and develops comprehensive training guidance for DoD pest management personnel.
- Coordinates DoD contingency disease vector and pest management with the Joint Staff, the Combatant Commands and other contingency planning organizations.

AFPMB – Key Activities (cont)

- Serves as an advisory body to the DoD Components and provides timely scientific and professional pest management advice.
- Develops and distributes technical information and guidance on pest management to the Components by means of Technical Information Memoranda and Bulletins, Disease Vector Ecology Profiles and similar publications.
- Reviews and approves any introduction, stockage, and deletion of pest management materiel (excluding disinfectants and biocides) by the Defense Logistics Agency (DLA) in the DoD supply system.
- Coordinates and develops requirements for pest management research, development, testing and evaluations in the DoD.
- Operates the Defense Pest Management Information Analysis Center (DPMIAC)

AFPMB – Strategy

The strategy of the Armed Forces Pest Management Board is to support military readiness and preventive defense and to demonstrate environmental leadership and avert future pollution problems by maximizing the use of non-chemical or least toxic chemical techniques to control pests and disease vectors. To support this strategy, the Board will:

- Promote integrated pest management, biopesticides and least toxic pesticides for installations and deployments.
- Advocate personal protection measures against vector-borne diseases.

AFPMB Key Partners

- USDA
- CDC
- State Entomologists
- State Departments of Health
- USPHS

EPA

Regions

(education and outreach)

Office of Pesticide
Programs

ORD/National Center for
Environmental Research

(funds several research projects
through the STAR program)

Field and External
Affairs Division

(new rules*, data guideline
revisions*, product labeling*,
education/outreach*)

Biopesticides and
Pollution Prevention
Division

(IPM oversight*, data
requirements*, guideline
revision*, product labeling,
education/outreach)

Registration Division
and Special Review
and Reregistration
Division

(product labeling*, data
requirements*, guideline
revisions, education/outreach)

EPA's Mission

To protect human health and the environment

- For TBDs, registering pesticides that control ticks and repellents that help prevent disease transmission from ticks to humans or any other animal to which the repellent is applied
- Also includes IPM and other pollution prevention activities

EPA Responsibilities and Mandates

To register pesticides and repellants for use in preventing disease transmission, EPA:

- Evaluates risks and benefits for registered pesticides
- Ensures that a pesticide, when used according to its label, can be used with a reasonable certainty of no harm to human health and without posing unreasonable risks to the environment.
- Requires numerous different scientific studies and tests
- Also requires demonstration of efficacy, for pesticides with public health uses

EPA Key Program Activities

- Ensuring that safe, effective pesticide products are available to control disease vectors
- Providing communications materials and education on the best use of pesticides, especially within an IPM program
- Finalizing guidelines for efficacy data requirements, determining best way to inform public about repellent efficacy

Key EPA Partners

- EPA works with many stakeholders, including: other federal agencies (CDC, USDA, DoD, ...), regulated industry, user communities (AMCA, NPMA, ...), state governments and public health departments
- Stakeholders frequently provide input on issues, such as label revisions, changes to product use parameters, and benefits of pesticide products
- Under the Federal Insecticide, Fungicide and Rodenticide Act, EPA is required to consult with CDC before taking regulatory action on any public health pesticide

EPA efforts that cross-cut human, livestock, and wildlife disease concerns

- EPA recognizes use of pesticides to control ticks may interrupt disease transmission
 - Indoor and outdoor sprays, collars and topical treatments for animals, for use in wildlife areas frequented by humans and on livestock, wildlife and companion animals.
 - Innovative application techniques such as the 4-poster and MaxForce systems, some of which were championed by other governmental agencies.
- EPA is funding several projects to research tick behavior and disease transmission

FDA - Office of In Vitro Diagnostic Device Evaluation & Safety (OIVD)

Mission: We work to promote and protect public health through clear and consistent regulation of in vitro diagnostic devices (IVDs). We have a dual charge to foster the rapid transfer of good new IVDs into the medical market while preventing marketing of unsafe or ineffective devices. We strive to ensure our work is transparent and allows all stakeholders to obtain the knowledge required to make informed decisions about the development, production, and use of IVDs.

FDA – OIVD

Key Activities: OIVD provides timely, comprehensive, and integrated regulatory oversight for IVDs through our Total Product Life Cycle program by...

- Applying technical and administrative expertise seamlessly to a continuum of regulatory processes
- Encouraging systematic information flow and feedback between the CDRH offices and divisions involved in the regulation of IVDs and using this feedback to improve oversight of the devices before and after they reach the market
- Maximizing the timeliness of decision-making and staff interaction
- Actualizing the spirit of the least burdensome provisions of FDA Modernization Act (FDAMA) by expanding the choices available and simplifying the current methods for defining IVD performance
- Developing new methods of postmarket monitoring of IVDs that produce a more complete picture of IVD device behavior in an everyday setting.

Lyme Disease Association , Inc.

LDA Mission Statement: The Lyme Disease Association, LDA, is a national non-profit organization dedicated to promoting awareness of and controlling the spread of Lyme and other tick-borne diseases (TBD) and their complications through education and other means, to raise and distribute funds for Lyme and TBD research, education and other related Lyme and TBD issues, and to assist underprivileged patients in connection with Lyme and other TBD

Lyme Disease Association , Inc.

Key Program Goals:

- Reduce the spread of Lyme and other TBDs throughout the general population
- Reduce the spread of Lyme and other TBDs in children
- Educate physicians about Lyme and other tick-borne diseases
- Facilitate Lyme disease patient wellness
- Enhance the capability and productivity of TBD researchers
- Improve cooperation with public officials on TBD strategies
- Integrate other groups into LDA nationwide effort

Lyme Disease Association , Inc.

Key Program Activities:

- Provide public forums to promote Lyme disease education
- Provides assistance to children without insurance coverage
- Produce educational materials (printed, electronic)
- Provide school in-services
- Maintain toll-free information line
- Provide physician referral service
- Develop and promote legislative efforts
- Host medical conferences with CME credit courses
- Work with government agencies in promoting efforts to reduce TBDs

LDA Partners

- Affiliate groups (32 around the U.S.)
- Academic partners (Columbia University School of Medicine, UMDNJ)
- U.S. Army (CHPPM) - sharing information on research & tick reduction efforts
- EPA (Pesticide Environmental Stewardship Program - PESP)
- CDC (Ongoing discussions on Lyme disease diagnosis, treatment, prevention, and control)

LDA Efforts that Cross-cut Human, Livestock, and Wildlife Disease Concerns

The above is not directly applicable to LDA; however, LDA is partnering with IDEXX, an international veterinary lab, to help educate the public concerning Lyme disease in pets and also educating the public to increased risks of TBDs when one has a pet and how to reduce that risk.

NIH/NIAID Mission Relating to TBDs

NIAID recognizes the impact of TBDs in the United States and continues to support research leading to improved diagnostics, treatment and prevention.

NIH/NIAID Key Responsibilities and Activities

The NIAID conducts and supports basic and applied research to better understand, treat, and ultimately prevent infectious, immunologic, and allergic diseases. NIAID recognizes TBDs as an important public health issue in the United States and abroad.

NIAID activities focus on both basic science and product development. NIAID-sponsored TBD research includes studies of Lyme disease, ehrlichiosis, anaplasmosis, babesiosis, tularemia, rickettsioses (such as typhus and Rocky Mountain spotted fever), tickborne encephalitis and relapsing fever.

The Institute also funds studies focused on general tick biology, including vector-pathogen interaction, use of entomopathogenic fungi to control tick populations, mechanisms of tick saliva inhibition of host innate immunity, and tick feeding.

NIH/NIAID Partners

- Primary partners are academic and industrial researchers
- NIAID collaborates with CDC and USDA to address areas shared among their organizational missions. For example, in 2008, NIAID and CDC co-funded a serum reagent repository, to be managed by CDC, for use in developing improved diagnostic tests for Lyme disease

NIH Efforts that Cross-cut Human, Livestock, and Wildlife Disease Concerns

NIAID supports research on human infections and focuses on studies aimed to ultimately provide improved diagnosis, treatment and prevention. The Institute recognizes the expanding role of emerging or re-emerging infectious diseases, many of which are zoonotic, and will support cross-cutting research where it focuses on human pathogens and human disease.

National Park Service Responsibilities, Mandates, and Mission*

- Work to identify public health issues and disease transmission potential in the parks and to conduct park operations in ways that reduce or eliminate these hazards.
- Control native pests to... manage a human health hazard.
- The safety and health of employees, contractors, volunteers, and the public are core Service Values.
- The fundamental purpose of all parks also includes... deriving benefit (including scientific knowledge)..

*from the NPS Management Policies 2006

National Park Service Responsibilities

- Respond to infectious disease case reports and outbreaks
- Develop disease surveillance systems
 - Park-based data (e.g. ranger reports)
 - Health department-based data (notifiable disease case reports)
- Improve public health programming and disease prevention activities
- Collaborate with external partners on applied public health research projects
- Advise senior agency officials and managers regarding public health matters
- Develop public health policies

National Park Service Key Activities

- Collaborate with CDC on employee health survey – Great Smokey Mountains and Rocky Mountain NPs
- Conduct multiple projects with the California Department of Public Health (3-year cooperative agreement)
 - TBRF in Yosemite NP
 - Lyme disease and tick survey at Golden Gate National Recreation Area
 - Vector-borne disease KAP survey for NPS employees at California parks
- Proposed Lyme disease modeling project at Gettysburg National Park

NPS Key Partners

- Other NPS divisions and programs (e.g. Integrated Pest Management, Wildlife Health and Management Program, Facility Management Division, Risk Management Division)
- CDC and other federal agencies (FDA, USDA, EPA)
- CSTE and state/local health departments

NPS Efforts that Cross-cut Human, Livestock, and Wildlife Disease Concerns

- *One Health Initiative*
- Disease Outbreak Investigation Team (DOIT)

ARS Organization

Secretary
of Agriculture

Under Secretary, Research, Education,
and Economics (REE)

Agricultural Research Service (ARS)
Office of the Administrator

Program Planning, Coordination, & Support

National
Program
Staff

Administrative
& Financial
Management

ARS
Homeland
Security

Office of
International
Research
Programs

Office of Chief
Information
Officer

Legislative
Affairs

Office of
Technology
Transfer

Information
Staff

Budget &
Program
Management
Staff

Office of
Scientific
Quality Review

Research Implementation & Information Delivery

Beltsville
Area

Mid South
Area

Midwest
Area

National
Agricultural
Library

North
Atlantic
Area

Northern
Plains
Area

Pacific
West
Area

South
Atlantic
Area

Southern
Plains
Area

ARS Laboratories

USDA

USDA APHIS
and ARS have
extensive
operational and
research
activities
concerning
ticks

- Bont ticks: Regulatory, formerly research
- Cattle fever ticks: Regulatory, eradication, research (Kerrville, Pullman)
- Lyme disease ticks: Research, deer crosslink to cattle fever (Yale, Beltsville, Kerrville)
- *Amblyomma* and *Dermacentor*: Repellents (Beltsville)

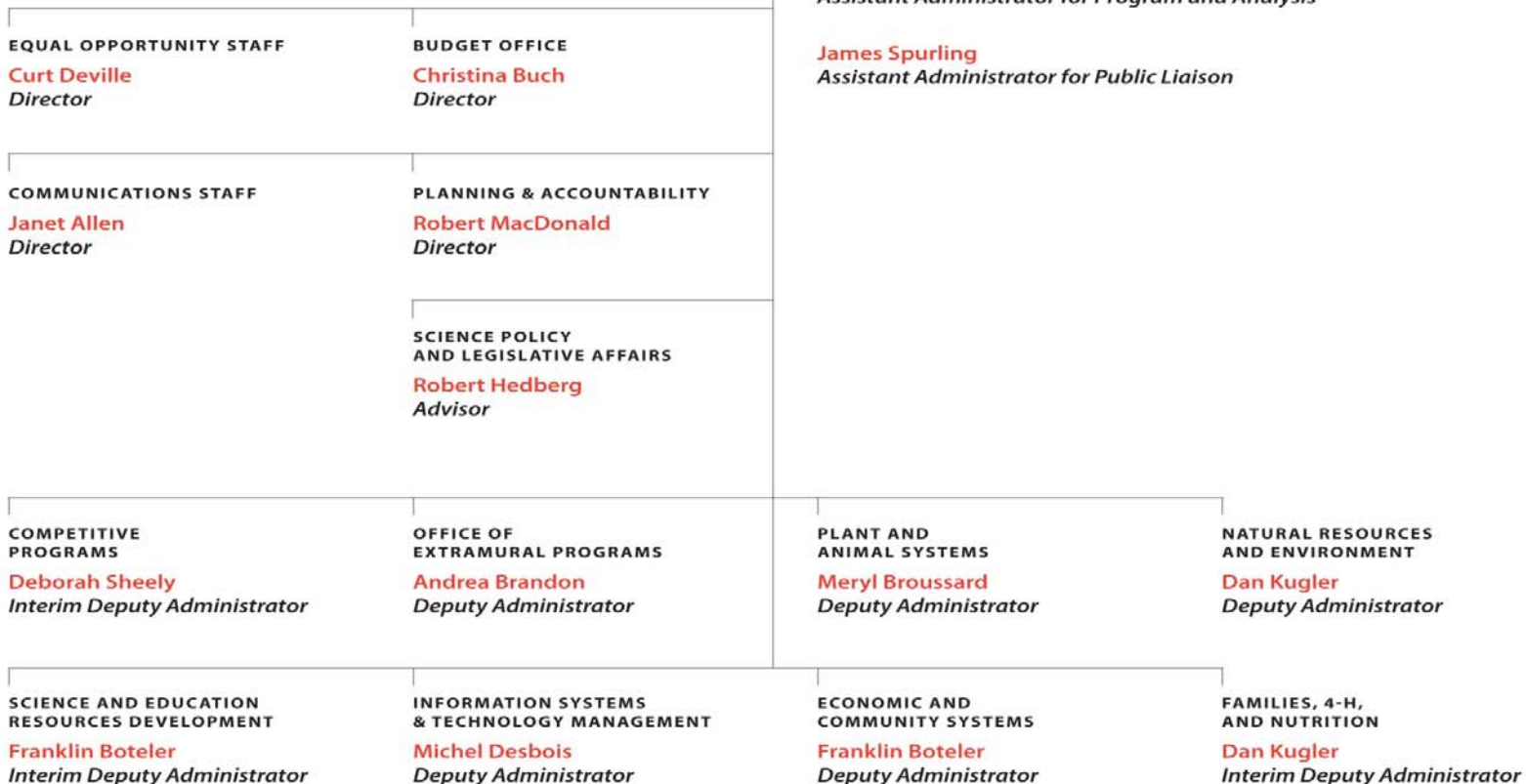


United States
Department of
Agriculture

Cooperative
State Research,
Education,
and Extension
Service

www.csrees.usda.gov

ORGANIZATION OF COOPERATIVE STATE RESEARCH, EDUCATION, AND EXTENSION SERVICE



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Assistant Administrator for Public Liaison

USDA: COOPERATIVE STATE RESEARCH, EDUCATION, & EXTENSION SERVICE

➤ *Mission: To advance knowledge for agriculture, the environment, human health and well being, and communities*

➤ *Multifunctional programs:*



➤ *Function 1 – provide program leadership to identify, develop, and manage programs to support university-based and other institutional research, education and extension activities*

➤ *Function 2 – provide fair, effective, and efficient administration of Federal assistance implementing research, education, and extension awards and agreements*

USDA Organization

Under Secretary for Research, Education & Economics



- CSREES performs USDA's support for extramural research, education, & extension programs
- CSREES administers over 25,000 projects organized into 60 programs grouped in 13 National emphasis areas
- CSREES has one headquarters location in Washington, DC
- CSREES has numerous funding opportunities under different legislative authorities.

CSREES: Cooperative State Research, Education, and Extension Service

- Target of major reorganization of REE Undersecretariate
- Changing to National Institute for Food and Agriculture (“the National Institute”)
- Current trends are for emphasis on competitive grants administered through NIFA
- Programs include livestock health

University of Illinois, NC IPM Center Activities and Collaborations

Conduct collaborative activities with the Arizona Department of Health Services to develop a national pest alert involving the common brown dog tick and its ability to transmit Rocky Mountain Spotted Fever

Major Issues to Consider

- The need for better diagnostic tests for TBDs
- The need for formal training programs for vector-borne disease specialists
- The need for new acaricides and better methods for controlling ticks
- Is there a place for increasing the role of animal surveillance as it relates to human disease risk?
- How are TBD-related efforts coordinated and conveyed between federal and state agencies and other stakeholders?
- How does institutional policy (state and federal) translate down to the public level and affect services the public can receive for TBDs, including prevention, control, treatment and physician services?
- Who is responsible for and empowered to control ticks and tick-borne disease?
- What unexplored or underutilized opportunities exist for interagency cooperative efforts in preventing and controlling TBDs?
- What other needs are currently not being addressed?