

National Animal Disease Preparedness and Response Program (NADPRP) FY 2021 Projects

In Fiscal Year 2021, APHIS provided \$9.3 million for 46 projects focused on (1) improving capabilities and capacity for rapid and large-scale animal depopulation and/or carcass disposal during a high-consequence animal disease outbreak response, or (2) enhancing U.S. livestock biosecurity.

Title	Recipient	Amount	Summary
Advancing On-Farm every day and Enhanced Biosecurity with U.S. Dairy Farmers Through the National Dairy FARM Program	National Milk Producers Federation	\$488,603	The National Milk Producer Federation (NMPF) will improve awareness and understanding of on-farm biosecurity standards and implement Secure Milk Supply (SMS) plans through education, evaluation, and verification. They will also conduct an exercise that will support implementation of the SMS plan at the farm level during a foot-and-mouth disease outbreak.
Develop and Deliver National Education Resources for Practical Implementation of Large-Scale Swine Depopulation Methods	American Association of Swine Veterinarians	\$86,752	The American Association of Swine Veterinarians will systematically gather information from the swine industry's recent experience with depopulation due to COVID-19 market disruption and compile it into useful new resources for swine veterinarians and farmers to improve capabilities and capacities for responding to future emergency events. The project will deliver specific recommendations on methods for practical on-farm depopulation, decision-making tools, equipment lists, record-keeping forms, and training and debriefing tools to help veterinarians and farmers manage depopulation events.
Arkansas-Based Mission Ready Depopulation and Carcass Disposal Package and Team	Arkansas Department of Agriculture, Livestock and Poultry Division	\$133,811	Arkansas Department of Agriculture will assemble a depopulation team to enhance the State's carcass disposal capabilities, with focus on large livestock. They will build develop CO2 and electrical depopulation capacity and train emergency responders on the humane and safe procedures.
Capacity Building Using Train-the-Trainer Approach to Improve Biosecurity and Reduce Disease Spread in Small-scale and Backyard Livestock and Poultry Premises	University of California, Davis	\$397,409	University of California, Davis will address known disease risk factors and prevention management gaps in veterinary services provided to small-scale farms and high-risk alternative agriculture systems, including those in urban areas, in CA, OR, WA, and CO by improving access to and delivery of biosecurity information. The project includes analyzing key gaps, developing educational tools, and building capacity through train the trainer tools and resources on biosecurity.
California Secure Food Supply Program Expansion	California Department of Food and Agriculture	\$348,531	California Department of Food and Agriculture will expand the State's Secure Food Supply (SFS) Program by providing resources to improve biosecurity in multiple animal agricultural sectors based on lessons from the recent virulent Newcastle Disease response. Biosecurity templates will

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			be developed that address daily and enhanced biosecurity plans that meet the CA SFS Program requirements for high-risk operations within all CDFA Animal Health Branch Districts in California.
Enhancement of Large-Scale Animal Depopulation and Disposal Capabilities in Georgia	Georgia Department of Agriculture	\$365,181	Georgia Department of Agriculture will acquire equipment and resources to enhance capacity to manage large-scale animal depopulation and carcass disposal. Project includes training a network of responders with focus on safety, partnerships, engaging producers, and building expertise, contacts, assets, and communication capabilities for effective livestock disease response.
Statewide Livestock Biosecurity Enhancement for Georgia	Georgia Department of Agriculture	\$208,214	Georgia Department of Agriculture proposes grassroots outreach to Georgia livestock producers to identify biosecurity best practices that will yield broad industry buy-in; they will develop and implement a State-wide biosecurity communication strategy using this information.
Assessing and Improving Biosecurity Knowledge and Practices Among Illinois Swine and Beef Cattle Producers and Veterinarians	University of Illinois	\$422,861	University of Illinois will strengthen biosecurity knowledge, plans, and practices on Illinois farms by identifying knowledge gaps among beef and swine producers and veterinarians, then developing and implementing focused online education and training for these audiences. Focus is on motivating producers and veterinarians to develop and implement effective, sustainable, practical, and cost-effective farm-specific biosecurity plans and incorporating protocols for biosecurity, decontamination, depopulation, and carcass disposal into farm-specific biosecurity plans.
Old Hog, New Tricks: Increasing Indiana's Capacity for Timely and Humane Mass Euthanasia of Swine	Indiana Board of Animal Health	\$331,710	Indiana Board of Animal Health will improve management of high-consequence animal disease outbreaks through the design and development of a deployable euthanasia system. The project will also determine best practices for use of this equipment, develop operating procedures, and public, private, and academic animal agricultural responders from Indiana and other States.
Exploring Heat Treatment for Swine Facilities to Conduct Virus Elimination and Increase Mass Carcass Disposal Options	Iowa State University	\$194,248	Iowa State University will provide a new technique that will increase options for practical management of carcasses in disease outbreak response events. Investigators will develop and validate the use of heat treatment to inactivate virus in swine carcasses in barns, thereby eliminating the virus before moving carcasses for disposal. This new technique may impact national policies and practices associated with carcass disposal.

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Biosecurity Courses for Veterinary Audiences to Increase Implementation of Practical Measures to Protect Animal Health	Iowa State University, Center for Food Security and Public Health	\$393,097	Iowa State University's Center for Food Security and Public Health will develop and deliver free, nationally available online biosecurity courses for veterinary students, veterinary technicians/support personnel, and veterinarians. The content will be applicable across all species, industries, and programs and comprehensively cover principles of biosecurity and practical application of biosecurity on farm and in the clinic. The project incorporates multiple approaches to maximize the national impact of the educational content.
Daily Biosecurity and Organic/Non-Conventional Livestock Production: Increasing Awareness of Producers and the Animal Health Partners Who Serve Them	Iowa State University, Center for Food Security and Public Health	\$276,820	Iowa State University's Center for Food Security and Public Health will address biosecurity needs of organic and non-conventional (O/NC) producers by assessing their current knowledge, views, and practices across all species and then developing tools to address gaps and improve biosecurity on these farms. Outreach and education will be developed to train veterinarians and allied animal health practitioners to advance biosecurity principles of O/NC producers.
Livestock Biosecurity Planning Toolkit for Fairs and Exhibitions	Kansas State University	\$199,340	Kansas State University will create a biosecurity planning toolkit to help livestock fairs and exhibition event organizers, local emergency management officials, and animal owners develop plans for biosecurity and safety of animals at fairs and exhibition events. The project will leverage existing information, address known gaps, and provide practical information to this unique audience.
Biosecurity for cattle operations: Quantitative Risk Estimation of FMD transmission following cattle movements during an outbreak	Kansas State University	\$166,810	Kansas State University will support continuity of business and Secure Beef Supply plans by estimating risk associated with moving cattle from premises in control areas during a disease outbreak. This model will inform animal movement decisions and policies that will foster continuity of business for cattle operations in control areas. Results will support State and USDA APHIS efforts to minimize spread of FMD during an outbreak.
Building Capacity of Livestock Compost Subject Matter Experts	Kansas Department of Agriculture	\$119,443	Kansas Department of Agriculture and industry partners will address a current critical need to build a team of livestock compost subject matter experts. This capacity-building will enhance regional ability to address large-scale animal disposal challenges in an appropriate, timely, and environmentally safe manner.
Strengthening Kentucky's Emergency Preparedness and Livestock and Poultry Biosecurity	Kentucky Department of Agriculture	\$236,017	Kentucky Department of Agriculture will address critical preparedness gaps identified in the 2018 Agriculture Response Management and Resources (ARMAR) functional exercise by developing and training an incident management team; assessing current biosecurity practices in

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			beef, swine, and poultry industries; developing and implementing new secure food supply biosecurity plans in these industries; training and exercising industry partners on biosecurity; and building a State-specific biosecurity and emergency preparedness outreach and education program focusing on HPAI, FMD, and ASF.
Closing the Loop: Is Land Application of Carcass Compost Safe and Productive for Cropping Systems in Northern Climates?	University of Minnesota	\$182,884	University of Minnesota investigators will address practical and appropriate use of composted materials from animal mortalities. They will develop and evaluate guidelines for effective land application of this resource, address contaminant concerns, and develop and distribute outreach materials on this topic for producers, veterinarians, regulatory officials, and emergency management personnel.
Adapting High Expansion Foam for Use in American Systems for Mass Depopulation and On-Farm Culling	University of Minnesota	\$500,469	University of Minnesota will evaluate use of high expansion nitrogen foam on swine, turkey, and dairy farms for use as a humane method of euthanasia and for mass depopulation and develop outreach and education to promote this technology. This approach is used in other countries and is considered safe, easy to use, and scalable. Results will enhance U.S. capacities for large-scale and rapid depopulation during an FAD outbreak.
Managing Terminal and Transfer Animal Movement from FAD-Vaccinated Populations in a Disease Emergency	University of Minnesota	\$237,304	Although vaccination is part of U.S. response plans for several high consequence diseases, movement of vaccinated animals in an outbreak situation may be restricted and present continuity of business challenges. To address this, University of Minnesota will conduct a risk assessment of movement of HPAI-infected turkeys. Results will inform safe animal movement decisions and continuity of business permitting guidance and support vaccination use as a control strategy in a HPAI event.
The Utilization of Livetec Systems Nitrogen Foam Delivery System for the Rapid, Large- scale Depopulation of Swine	Minnesota Department of Agriculture	\$454,991	Minnesota Department of Agriculture will evaluate a patented nitrogen foam delivery system for use in large-scale swine depopulation in animal disease emergency response events. This technology mitigates several challenges currently associated with large-scale swine depopulation, and it is a humane and ethical method approved in the European Union and accepted by AVMA. Successful validation of the technology may provide more accessible depopulation methods for use in U.S. animal disease emergency response.
Knowledge, Attitude and Practices Regarding Implementation of	University of Minnesota	\$184,305	University of Minnesota will assess producer views and practices regarding biosecurity implementation and identify areas for improvements. They will identify new, practical ways to improve swine producers' implementation

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Enhanced Biosecurity Measures Among MN Swine Producers			of biosecurity practices that are critical to successful implementation of secure pork supply plans.
Strengthening Biosecurity of Livestock Operations through Integrated Field Training	Mississippi Board of Animal Health	\$51,121	Mississippi Board of Animal Health and Mississippi State University College of Veterinary Medicine will collaborate to train veterinarians, livestock producers, and youth livestock exhibitors in cattle biosecurity practices. Content and delivery will be customized to deliver highly useable information to different audiences.
Enhancing the Capacity and Capability of Preventing and Responding to Depopulation and Disposal Events	Mississippi Board of Animal Health	\$99,337	Mississippi Board of Animal Health will improve overall capability of preventing and responding to livestock disease events through targeted enhancements in decontamination, depopulation, and disposal. The project will build capacity in animal disease preparedness, response, and recovery activities by reducing the risk of disease transmission, decreasing Federal dependency for immediate response on the ground in Mississippi, and improving Mississippi's access and ability to use response equipment needed during disease response.
Missouri Agriculture Disease Preparedness & Response Capability Building	Missouri Department of Agriculture	\$84,150	The Missouri Department of Agriculture will develop and deliver communications to increase readiness of Missouri producers to effectively respond to high- consequence animal disease events; the project addresses deficiencies identified in recent regional exercises. MDA will develop, distribute, and deliver educational materials to advance biosecurity and secure food supply plans.
Missouri Department of Agriculture Progressive Depopulation and Disposal Training and Exercise Project	Missouri Department of Agriculture	\$306,339	Missouri Department of Agriculture will use a strategic approach to address known gaps and develop capabilities for mass animal depopulation and carcass disposal in animal disease outbreak response events. The project will train State experts through coursework, consultation with experts, and participation in projects and exercises in other States. the team will also conduct a functional exercise to further strengthen the State's preparedness and response skills.
Enhancing On-Farm Biosecurity Education and Collaboration	University of Missouri	\$158,106	University of Missouri Extension will develop a mobile educational trailer for biosecurity and emergency management outreach and demonstrate on-farm mortality composting. Project includes workshops and webinars to educate and motivate producers to improve biosecurity protocols; it expands on successful work developed by UM Extension, MO Department of Agriculture and Department of Resources, USDA APHIS, and USDA Natural Resource Conservation Service.

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Biosecurity Education for Montana's Cattle Industry	Montana Department of Livestock	\$29,540	Montana Department of Agriculture will develop and implement education and outreach to increase biosecurity awareness and biosecurity practices in Montana's cattle industry.
Nebraska Euthanasia Plan and Resource Acquisition for Swine, Small ruminants, and Poultry	Nebraska Department of Agriculture	\$200,000	Nebraska Department of Agriculture will address critical needs and improve capabilities and capacity in Nebraska for mass animal depopulation in the event of a large-scale swine or poultry disease outbreak in Nebraska. It includes developing depopulation plans, purchasing equipment, developing standard operating procedures, and training responders.
Regional and International Response to a High Consequence Mortality Event Requiring Carcass Disposal	Southwest Border Food Protection and Emergency Preparedness Center, NMSU and New Mexico Department of Agriculture	\$270,008	The Southwest Border Food Protection and Emergency Preparedness Center, New Mexico State University, and New Mexico Department of Agriculture will create a State-wide plan for carcass disposal in the event of a high-consequence livestock disease event and deliver training to establish abilities to coordinate implementation of the plan across agencies, neighboring States, and with Mexico. Project includes outreach and education materials and a communication campaign.
New York State Cattle Health Assurance Program Continuity of Business	New York State Department of Agriculture and Markets	\$80,218	New York State Department of Agriculture and Markets will update biosecurity modules in the NYS Cattle Health Assurance Program to meet accessibility standards and expand the program to include continuity of business modules and tools veterinarians can use to create farm-specific biosecurity plans that meet Secure Food Supply criteria. The program will impact large and small dairy, beef, goat, sheep, and cervid producers.
NYS Local Carcass Composting for High- Consequence Animal Disease Outbreak Response	New York State Department of Agriculture and Markets	\$128,130	New York State Department of Agriculture and Markets will work with State and county agencies to advance local capacities to respond to large-scale animal disease outbreak events by developing and delivering resources to help producers and livestock congregation centers deal with carcass disposal quickly, safely, and in an environmentally responsible manner and exercising the new framework.
7th International Symposium on Animal Mortality Management	North Carolina Department of Agriculture and Consumer Services	\$142,175	Funds will support the June 2022 International Symposium on Mass Animal Depopulation and Mass Animal Mortality Management to be hosted by the North Carolina Department of Agriculture.
Combining Standardized On-Farm Biosecurity Plans with Animal Movement Data in a User- Friendly Rapid Access Biosecurity	North Carolina State University	\$182,301	North Carolina State University and Oklahoma Department of Agriculture cooperators will develop a framework and database to integrate accurate, current, standardized information about farm locations, biosecurity plans (SPS), and animal movement during an outbreak. The project will yield

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Management Tool: A Multi-State study			standardized data on SPS and biosecurity plans, enhance SPS adoption, and characterize within- State and between-State swine movement data to inform risk-based prevention and control programs for swine diseases.
Effective Swine and Cattle Depopulation Practices – Evaluating Options and Addressing Species Based Training Needs	Ohio State University	\$191,961	Ohio State University will expand options available to cattle and swine producers in a disease outbreak where rapid depopulation may be needed to halt disease spread. Ohio State University will assess effectiveness of water- based foam depopulation in cattle, develop a training curriculum on this method, and train farm personnel and other trainers.
Tick tock: Identifying and Addressing Gaps in Biosecurity Training Against the Rapid Expansion of Invasive Ticks	Ohio State University	\$56,052	Preventing, detecting, and quickly responding to tick infestations (i.e., tick biosecurity) is critical to preventing and controlling spread of many high consequence animal diseases and protecting the health and safety of agricultural workers.
Effective Livestock Disposal Under Mass Depopulation – Addressing Alternatives and Training for Occurrence	Ohio State University	\$206,110	Ohio State University’s Extension program will work with State and county livestock producers and agriculture, emergency management, and environmental agencies to develop a toolkit to specifically assist local entities in this region manage large-scale livestock carcass disposal in a high consequence disease outbreak event.
Facilitating the Implementation of Secure Pork Supply Plans	Ohio State University	\$19,621	Ohio State University and the Ohio Pork Council will customize and expand existing training and outreach materials to help Ohio producers, biosecurity managers, and veterinarians complete site-specific Secure Pork Supply (SPS) plans, focusing on small producers and underrepresented groups. Ohio State University will survey producers and veterinarians to assess knowledge, views, and practices regarding ticks and tick- borne diseases and develop and implement training to address biosecurity gaps.
Determining the State of Biosecurity knowledge and Implementation among Beef Cattle Producers	Oklahoma State University	\$128,375	Oklahoma State University Extension will survey Oklahoma cow-calf producers to assess of producer knowledge, practices, and views on biosecurity with focus on costs. Results will be used to develop education materials to promote practical and cost-effective biosecurity practices among cow-calf producers.
Level of Infectious Virus in Decomposing Tissues Under Simulated Environmental Conditions	Oklahoma State University	\$112,111	Oklahoma State University will examine the viability of different viruses in different tissues at different temperatures. The results will provide practical information to improve policies and processes for the safe disposal of animal carcasses in a large-scale animal disease outbreak.
Emergency Grinding and Compost Training and Education for Regional Industry Stakeholders	Pennsylvania State University	\$171,784	Pennsylvania State University will develop methods for using small grinders to respond to catastrophic animal disease events and compare grinder methods. It will evaluate compost nutrients to assess best use of

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			compost. The project will provide hands-on training and will prepare Pennsylvania and northeastern State’s stakeholders to respond to large-scale animal disease events.
Decision Support Tool for the Evaluation of Centralized Carcass Disposal during an African Swine Fever Outbreak	Texas A&M AgriLife Research	\$109,476	Texas A&M AgriLife Research Institute for Infectious Animal Diseases will create a decision support system to help State and federal authorities and livestock producers in a large-scale swine disposal event. The decision support tool will help decision-makers examine and assess all factors associated with the options for on-farm or centralized-location disposal methods in an outbreak.
Advancing Animal Biosecurity Awareness and Education for Underserved Producers	Prairie View A&M University, International Goat Research Center	\$150,000	Prairie View A&M University's International Goat Research Center will deliver biosecurity outreach and education to historically underserved and low socioeconomic animal agriculture producers in Texas. An initial survey to assess biosecurity knowledge will be used to develop and deliver workshops and educational material to address gaps. The project includes professional development for extension agents and includes a strategy to measure impact.
Ventilation Shutdown plus Heat Proof-of- Concept, Training, and SOP Development for a Turkey Facility	Utah Department of Agriculture and Food	\$11,379	The Utah Department of Agriculture and Food will conduct a proof-of-concept study for ventilation shutdown plus heat for depopulation and virus deactivation in turkey barns. This project does not involve any animals. The project includes studying and validating depopulation protocol in an empty barn to train animal agriculture response personnel, validate the protocol under different conditions, and identify resource needs should the protocol be needed in an emergency.
Secure Food Supply- New England Style	University of Vermont and State Agricultural College	\$263,716	This Vermont-led, New England-wide project will build on previous project to continue Secure Milk Supply planning, engage with public and private veterinarians and producers, develop a Secure Food Supply plan appropriate for New England, and deliver an application to support readiness at the farm level. The University of Vermont and State Agricultural College project includes a series of workshops and related activities, a regional tabletop exercise and an after-action report and improvement plan.
Building a Culture of Biosecurity	Wisconsin Department of Agriculture, Trade, and Consumer Protection, Division of Animal Health	\$53,385	The Wisconsin Department of Agriculture, Trade, and Consumer Protection, Div. of Animal Health will develop and launch a biosecurity outreach campaign to deliver practical information on biosecurity practices in an easily digestible format. The primary target audience is youth – including 4-H, FFA, fair exhibitors, school age children – and adult

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			members of producer groups (swine, beef, dairy, and poultry) and livestock industry vendors.
Mobile CO2 Swine Depopulation Unit for Market Weight Hogs – Design, fabrication, and testing	Wisconsin Department of Agriculture, Trade, and Consumer Protection, Division of Animal Health	\$188,812	Wisconsin Department of Ag, Trade, and Consumer Protection, Div. Animal Health will build and test swine depopulation equipment using of carbon dioxide gas as approved by the American Veterinary Medical Association (AVMA). They will develop and distribute equipment specifications, procedures, and testing results with other State or Federal entities.