A human behavioral approach to reducing the impact of livestock pest or disease incursions of socio-economic importance

Julia M. Smith[1], Thomas Bass[2], Gabriela Bucini[1], Steve Dritz[3], Susan Kerr[4], Chris Koliba[1], Robert Littlefield[5], Jeannette McDonald[6], Scott Merrill[1], Jason Parker[1], Jeanne Rankin[2], Lee Schulz[7], Deanna Sellnow[5], Timothy Sellnow[5], Rebecca Sero[4], Glynn Tonsor[3], and Asim Zia[1]

[1]University of Vermont, [2]Montana State University, [3]Kansas State University, [4]Washington State University, [5]University of Central Florida, [6]TLC Projects LLC, [7]Iowa State University

The activities and outputs of this project will facilitate the development and adoption of practices and policies that collectively reduce the impact of new, emerging, and foreign pests and diseases to domestic production of cattle, swine, and small ruminant foods and byproducts. These efforts address **Priority Area A5152 within the Food Security Challenge Area—Animal Health and Production and Animal Products**.

Project Overview

Emerging diseases of socio-economic importance have food security, perceived food safety, and domestic and international trade implications for the marketing of animals or animal products. Understanding the human behavioral dimensions of the introduction, spread, identification, reporting, and containment of new, emerging, and foreign pests and diseases of livestock is critically important for developing effective strategies to sustain a productive, profitable, and secure food animal sector. Experts in animal science and veterinary medicine, agricultural economics, public policy, anthropology, adult education, and risk communication come together to lead this inter-disciplinary applied research and outreach project focused on enhancing biosecurity practices and strategies to reduce the impact of incursions of new, emerging, or foreign pests or diseases of dairy, beef, and swine.

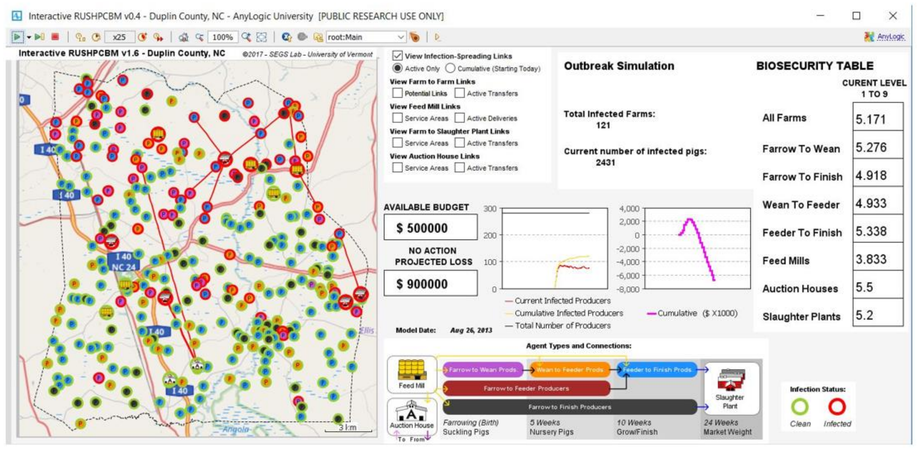
Educational Outreach

We are developing online biosecurity modules targeting 6th–12th grade (4-H and FFA) students.

Experimental Games and Simulations

We are using games to understand the drivers of biosecurity implementation at an operational level within facilities and at a strategic level by facility management. We are developing simulations to reveal the effect of biosecurity implementation at a regional (county or state) level.

At right, the interactive agent-based model dashboard. Players can invest in biosecurity at various locations in the system.

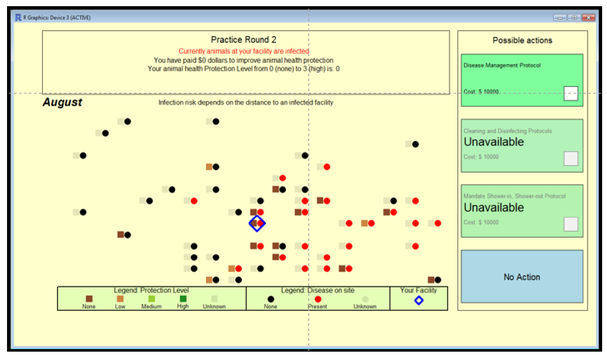


Behavioral Economics Research

We are conducting surveys to understand how government policies can incentivize biosecurity investments.

Survey says . . . swine producers are more likely to engage in proactive biosecurity investments if indemnity is conditional on biosecurity effort.

Below, players invest in biosecurity in the context of information about health status and protective measures of surrounding facilities.



Below, players complete tasks while choosing whether or not to follow biosecurity protocols.

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PROTECTING HERD HEALTH
An Animal Disease Biosecurity Coordinated Agricultural Project