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Combatting tickborne diseases with  
social science research & outreach

PIE Center leads statewide needs  
assessment for UMaine Extension



# THE SLICE

# Let's talk about ticks:

## Combatting tickborne diseases with social science research and outreach

By Sydney Honeycutt



American dog tick  
(*Dermacentor variabilis*)

Cases of tickborne diseases are on the rise in the United States, signaling a need for effective public health communication. In response, the PIE Center is exploring perceptions of tickborne diseases to develop educational programs on tick bite risks and prevention strategies.

This initiative is part of a larger interdisciplinary effort led by the CDC Southeastern Center of Excellence in Vector-Borne Diseases (SECVBD): Gateway Program. The PIE Center's role focuses on the social and behavioral aspects of tickborne disease communication, empowering communities to make informed decisions about tick prevention.

### **Online research examines public awareness**

With a large portion of the U.S. population seeking health information online, the PIE Center analyzed discussions surrounding ticks on digital platforms. Social media content and online searches were

## Partnering for a Purpose: PIE Center Leads Statewide Needs Assessment for UMaine Extension

By Caitlyne Youmans

**“We are grateful for the expertise Dr. Baker and the PIE researchers bring to UMaine Extension as they provided invaluable guidance and leadership with our statewide needs assessment. The incredible research they conducted is essential for UMaine Extension to create a sustainable and impactful organization of the future.”**

- Jason Bolton, Ph.D.

Associate Dean and Program Leader for Food and Nutrition, UMaine Cooperative Extension

The PIE Center recently concluded a year-long research project in collaboration with the University of Maine Extension (UMaine), demonstrating the PIE Center's commitment to enhancing agricultural and Extension programs nationwide.

The primary objective of the project was to assess UMaine Extension programming from the viewpoint of its stakeholders, employees and volunteers, providing critical insights for the organization's future direction. Lauri Baker, UF/IFAS associate professor of agricultural communication, led the social science research, which took place in person at UMaine and virtually via Zoom.



examined to identify opportunities for enhancing tick awareness.

An analysis of 340 tick-related tweets on X (formerly Twitter) revealed notable trends in engagement.

“While over half of the tweets lacked images or visual aids, those that included visuals received higher engagement rates,” said Cheng-Xian Yang, UF/IFAS agricultural education and communication graduate assistant working with the PIE Center. “Tweets that only shared website links had lower engagement rates, indicating a need for more visually appealing content.”

Using Google Trends data, the PIE Center also discovered patterns in online searches for tick information. The highest search volume for tick risks occurred in the Northeastern U.S., while searches for “meat allergy” and “lone star tick” were more prevalent in Eastern and Southeastern states.

“We found a positive correlation between tick-related searches and popular outdoor activities like ‘u-pick’, ‘park’ and ‘hiking,’” said Lauri Baker, UF/IFAS associate professor of agricultural communication. “Interestingly, a negative correlation was observed with searches for ‘hunting,’ suggesting a potential gap in hunters’

connection of tick risks and their outdoor activities.”

### **Agricultural worker survey reveals knowledge gaps**

The PIE Center further explored perceptions through a survey of agricultural workers, a group with frequent exposure to ticks. The survey assessed tick prevention practices, knowledge of tickborne diseases and trusted information sources.

Results highlighted a concerning knowledge gap: despite half of respondents spending at least three days per week working outdoors, over 70% “rarely” or “never” used tick repellent. Respondents demonstrated satisfactory knowledge for general tick prevention but were largely uninformed about the lone star tick and Asian longhorned tick, two species of growing prevalence.

### **Raising awareness through outreach**

The PIE Center has already begun disseminating findings to raise awareness about tickborne diseases through various channels. Baker and Yang discussed preliminary results on the Science by the Slice podcast, while research presentations have increased visibility among academic audiences.

The team continues to develop outreach materials to further engage the public on this important topic. To learn more about the project and access resources, visit <https://piecenter.com/ticktalk/>.

Jason Bolton, associate dean and program leader for food and nutrition at UMaine Cooperative Extension, expressed his gratitude for the partnership.

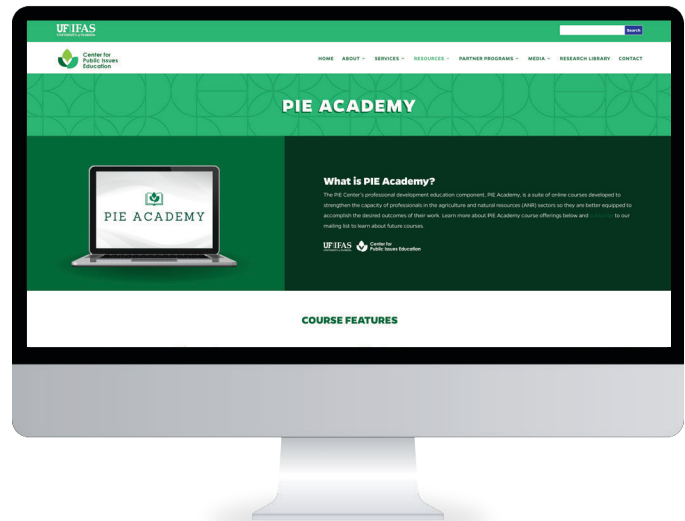
“We are grateful for the expertise Dr. Baker and the PIE researchers brought to UMaine Extension, as they provided invaluable guidance and leadership with our statewide needs assessment,” Bolton said. “The incredible research they conducted is essential for UMaine Extension to create a sustainable and impactful organization of the future.”

This joint project between two East Coast states explored the potential for research to enhance Extension services across the nation. The PIE Center aimed to produce findings that UMaine Extension could utilize to strengthen programming for farmers, communities and the agricultural industry.

For more information about this collaboration, visit <https://extension.umaine.edu/plugged-in/needs-assessment/>.



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