Public Tick IPM Working Group  
August 14th, 2019  
Please send additions, omissions or other corrections to mweber@ipminstitute.org

The Working Group meets via conference call on the second Wednesday of each month at 1:00PM CT (2:00PM EST). The following notes are for August 14th, 2019

Roll  
1. Abigail Matthewson, New Hampshire Department of Health and Human Services  
2. Andy Kogelnik, Tick-Borne Illness Center of Excellence  
3. Bob Maurais, Mainely Ticks  
4. Chris Stelzig, Entomological Society of America  
5. Dawn Gouge, University of Arizona  
6. Jill Auberach, Hudson Valley Lyme Disease Association  
7. Maria Weber, IPM Institute  
8. Mason Kauffman, US BIOLOGIC  
9. Monica White, Colorado Tick-Borne Disease Awareness Association  
10. Rachel Dildilian, PromptCare Home Infusion, LLC  
11. Scott Larson, Minneapolis/St. Paul Metropolitan Mosquito Control District  
12. Tim Fox, Madison Area Lyme Disease Network  
13. Tom Mather, University of Rhode Island  
14. Tom Simmons, Indiana University of Philadelphia

Agenda  
1. Dr. Andreas “Andy” Kogelnik will present on the Tick-Borne Illness Center of Excellence  
2. Updates and announcements on the Tick IPM Academy  
3. Updates, comments and announcements from the working group members

A recording of this call and presentation is available by visiting this link: https://global.gotomeeting.com/play/recording/d20116939665bafbe09275457f130bb47e462676a61208f0d305c9b9c5da78a

Dr. Andreas “Andy” Kogelnik, Open Medicine Institute and Tick-Borne Illness Center of Excellence, andy@openmedicineinstitute.org

Dr. Andy Kogelnik is the Director of the Open Medicine Institute. He completed his MD at Emory University School of Medicine and his PhD in Bioengineering at Georgia Tech. He trained as a resident in Internal Medicine and fellow in Infectious Diseases at Stanford University and remained there as a post-doc and research faculty before founding the Clinic in 2009 and Institute in 2011. Andy is presenting today on the Open Medicine Institute and Howard Young Foundation’s Tick-Borne Center of Excellence which is currently under-construction in Woodruff, Wisconsin.
Introduction

- Open Medicine Institute Mission: How do we accelerate and improve human health
  - Epidemic of chronic illnesses that are not easy to diagnose or treat
    - What are we encountering in our everyday lives?
- Tick-Borne Illness Center of Excellence
  - Funded in part by Howard Young Foundation
    - Large number of patients in Northern Wisconsin due to high exposure levels
  - Patient center to better prevent, diagnose and treat tick-borne illnesses
  - Research center to advance research on vectors we do not have enough information about to test for
    - Emerging viruses: Powassan virus, a tickborne flavivirus
    - Apply large and broad-scale measurements on a molecular level to test for everything that is known and possibly what is not known
  - Ticks can be anywhere: Example of ticks on the underside of a wildflower

Case Studies

- Case #1: 37-year-old otherwise healthy male, former physician, presenting with heart palpitations
  - Moved to Miami from the Northeast US
  - Struggles with increasing cognitive and neurological symptoms
    - Undiagnosed for 4 years with increasing symptomology
      - Cardiac workup negative
      - Antibody test came back abnormal
      - Tilt-table test: cannot regulate blood pressure
        - Illness can take over many parts of body through nervous system
  - Ends up needing heart transplant due to damage to heart as a direct result of Lyme disease
- Case #2: 43-year-old male with diabetes
  - Acutely ill presenting with vomiting and fever but without rash
  - Dies within 30 days of illness because *Borrelia* was not in his blood; it was a virus
    - One of 16 reported cases in New York State
- Take-home message: difficult to detect and diagnose
  - Current guidelines around Lyme disease are inadequate; more accurate for acute vs chronic cases

Ddx: Map of Reported Cases of Lyme disease

- Not all cases reported; doctor chooses whether to report to the county
  - Levels of funding moving up the ladder determines if incident is reported
  - Severe underestimate of actual cases
- Transmission: Pets, clothing
- Research screening: Veterinary map of testing for Lyme
  - Screened 240 random subjects
    - Random screening at Dragon Boat Festival and Beef-A-Rama in Minocqua area, Wisconsin
    - 25% of people who were tested were positive for one or more tick-borne illnesses
      - Lyme disease: 12-24-hour attachment needed for vector
        - Different strains of *Borrelia* makes diagnosis and treatment harder
      - Powassan virus: Can be transmitted within 15 minutes of a tick bite
      - Problem: Most people do not know when the tick attached to them
• Positivity rates are crazy: Underdiagnosis, testing problems

Looking to the Future
• Vaccination study: How can we eliminate ticks in certain populations
  o Vaccinating mice with non-replicating strains on New England islands
• Broad technologies
  o Measure hundreds of strains of tick-borne diseases instead of performing one test at a time
  o Sequence whole genome and then measure immune expression
    ▪ Use immune system expression to determine treatment plans

Questions
• Please repeat the Tick-Borne Illness Center of Excellence phone number
  o (715) 203-1616
• Jill Auberach: Became interested in tick-borne illness research and medicine after being misdiagnosed for a decade. As bad as the physical symptoms were, the mental were devastating, such as not knowing whether to place a postage stamp on the left or right side of an envelope.
  o Climate warming trends have expanded tick range
    ▪ Anecdote: Study of moose population die-off revealed immense numbers of ticks feeding on moose caused them to die by blood loss.
• Scott Larson: Does the center plan to test Northern Wisconsin wildlife for tick-borne illness?
  o No funding for this research yet; open to collaboration
  o Interest in veterinary testing programs
  o Mail in tick program
• Chris Stelzig: Where does funding for the center originate from
  o Issue with federal funding not properly considering these illnesses
  o Highly diversified sources of non-political funding: CDC, government, industry, foundations and non-profits, collaborations with various working groups
• Monica White: Will the center accept insurance initially?
  o Insurance will not be accepted initially; scholarships and donors will help fund patient treatment
  o Will be gathering data on center’s success in the first year to present to insurance companies

Updates and Announcements on the Tick IPM Academy
• To be held Wednesday, November 6th – Thursday, November 7th, 2019
• Location: Russell Laboratories, University of Wisconsin – Madison
  o Maximum 24 participants per classroom capacity
• Hotel and transportation to be announced
• Seeking donations of specimens from your area to examine
  o Donations can be sent to:
    The IPM Institute of North America, Inc.
    211 S. Paterson Street, Suite 380
    Madison, Wisconsin 53703 USA

Updates, Comments and Announcements from the Working Group Members
• Tim Fox: WI public hearing on ticks and state properties to be held Thursday, August 15th in Madison, WI
• Monica White: Started work with the HHS Tick-Borne Disease Working Group Subcommittee for Disease Vectors, Surveillance and Prevention again  
  o Glad to be continuing research and reporting to congress again

• Tom Mather: New subcommittee  
  o Alpha-gal subcommittee  
    ▪ Dr. William Nickolson has already spoken  
    ▪ Alpha-gal appears to be an increasing threat

These notes are for a Working Group call on **August 14th, 2019**. Future calls will continue to fall on the second Wednesday of each month at **1 PM Central time**.

**The Public Tick IPM Working Group is funded by the USDA National Institute of Food and Agriculture, Crop Protection and Pest Management Program through the North Central IPM Center.**