

Conference on health and emerging disease in wild cervids

National Wildlife Research Center, Fort Collins CO

Long's Peak conference room

July 23rd – July 25th

Day 1 objectives:

Presentations on research progress (general methods and site-specific results). Talks will be 10 minutes max with 5 minutes for questions.

Day 2 objectives:

Site updates from PIs, including where we are with data collection and nuances to consider in cross-site analyses. Second half of the day will focus on cross-site analysis approaches with discussion (45 min per session), including Human Dimensions.

Day 3 objectives:

Breakout groups for strategic planning (data and analytic workflow coordination, sustainable funding, etc - additional topics will be determined through Day 1/2 discussions). Wrap up with priorities for FY25.

AGENDA

Day 1: Tuesday, July 23rd

8:00-8:30 - Bagels, snacks, coffee (provided)

8:30-8:45 – Updates/Introduction of meeting goals (Kim)

8:45-10:30 – SPACE USE, HOST DENSITY & DISEASE OCCURRENCE

8:45-9:00 – *Assessing Movement and Habitat Use of Mule Deer to Understand Chronic Wasting Disease in the Wind River Basin, Wyoming* – Tucker Russel

9:00-9:15 – *A first look at white-tailed deer space use traits associated with SARS-CoV-2 seropositivity in Minnesota and plans to scale up to a national analysis* – Tyler Garwood

9:15-9:30 – *Determining Habitat-Driven Variation in Mule Deer Densities: A High-Resolution Approach Using Large Camera Grids* – Richard Evans

9:30-9:45 – *Predicting densities of white-tailed deer throughout their range in the contiguous United States* – Wow Horpiencharoen

9:45-10:00 – *Determining SARS-CoV-2 prevalence in mule deer fawns* – Megan Morrison

10:00-10:15 – *A Case of Mycoplasma Bovis in a Free-Ranging Mule Deer* – Jeremy Alder

10:15-10:30 – Discussion on space use, host density & disease occurrence

10:30-10:45 – Coffee break

10:45-12:15 – HOST CONTACT AND SOCIAL STRUCTURE IN DISEASE TRANSMISSION

10:45-11:00 – *Characterizing opportunities for contact in New York's white-tailed deer* – Meredith VanAcker

11:00-11:15 – *Quantifying the seasonal variation in home ranges and social interactions in white-tailed deer in Tennessee* – Justin Kosiewska

11:15-11:30 – *Importance of large-scale behavior in modeling deer contact and disease transmission* – Michael Egan

11:30-11:45 – *Modeling chronic wasting disease spread while integrating contact and behavioral data from collared animals* – John Vinson

11:45-12:00 – *Using expert-elicitation to inform epidemiological modeling of SARS-CoV-2 in white-tailed deer* – Elias Rosenblatt

12:00-12:15 – Discussion on host contact and social structure in disease transmission

12:15-1:15 – Lunch (catered by Chipotle, provided)

1:15-2:30 – DEER-HUMAN INTERACTIONS

1:15-1:30 – *Spatial and temporal overlap of white-tailed deer and humans in suburban and urban environments: two case studies using GPS collars and camera trap* – Travis Gallo

1:30-1:45 – *Overview of human-deer interactions workshops and interviews* – Kyle Smith

1:45-2:00 – *Harnessing online tools for effective workshop facilitation: gathering contextual data on deer-human interactions* – Maria Diuk-Wasser/Pilar Fernandez

2:15-2:30 – Discussion on deer-human interactions

2:30-3:15 – TECHNOLOGY

2:30-2:45 – *Designing a tool for adaptive surveillance in wildlife disease programs* – Lauren Smith

2:45-3:00 – *Enhancing Large Language Model Voice Transcription through Ecoacoustic Signal Processing and Supervised Qualitative Coding* – Logan Park

3:00-3:15 – Discussion on technology

3:15-3:30 – Coffee Break

3:30-5:00 – DETECTION AND HOST CONDITION IN DISEASE

3:30-3:45 – *Chronic wasting disease ecoimmunology* – Brian Dugovich

3:45-4:00 – *Incorporating within-host disease progression into CWD surveillance models* – Lauren Ricci

4:00-4:15 – *Allostasis and Allostatic Load: Linking Stress to Co-Infections in Deer* – Sara Hathaway

4:15-4:30 – *CWD detection by RT-QuIC in ear tissue and cause-specific mortality investigation* – Jennifer Hoy-Petersen

4:30-4:45 – *Assigning probability of CWD infection for ecological studies* – Becca Windell

4:45-5:00 – Discussion on detection and host condition in disease

5:00-5:15 – Check-in on final thoughts from Day 1 talks

6:30-9:30 - Dinner at Cafe Vino (Food starts at 6:30 and is included, drinks throughout by self-pay)

Day 2: Wednesday July 24th

8:00-8:30 - Bagels, snacks, coffee (provided)

8:30-8:45 – Updates from NWRC (Josh, Grete – progress overview)

8:45-9:00 – PI site update #1 – USU

9:00-9:15 – PI site update #2 – UMN

9:15-9:30 – PI site update #3 – UTK

9:30-9:45 – PI site update #4 – SIU

9:45-10:00 – PI site update #5 – PSU

10:00-10:15 – Coffee break

10:15-10:30 – PI site update #6 – Columbia

10:30-10:45 – PI site update #7 – CSU

10:45-11:00 – PI site update #8 – UMD

11:00-11:15 – PI site update #9 – NWRC/CSU (NE site)

11:15-11:30 – PI metagenomics update – UPenn

11:30-12:30 – Lunch (catered by Yampa Sandwiches, provided)

12:30-1:15 – *Human dimensions of SCV2 study: Updates, key questions, and next steps* – Kyle Smith

1:15-5:00 - HUMAN DIMENSIONS SESSIONS (HD TEAM; ORGANIZED SEPARATELY)

1:15-5:00 - ANALYSIS IDEAS FOR TARGETED SURVEILLANCE (TS TEAM)

1:15-2:00 – Cross-site analysis idea #1: *Deer demographic dynamics, life-history, social behavior, management and their relevance to deer as reservoirs of disease* – David Walter

2:00-2:45 – Cross-site analysis idea #2: *Estimate epi parameters* – Kezia Manlove/Josh Hewitt

2:45-3:30 – Cross-site analysis idea #3: *Movement* – Guillaume Bastille-Rousseau

3:30-4:15 – Cross-site analysis idea #4: *A framework of deriving spatial explicit contacts and model their spatial distributions* – Anni Yang

4:15-5:00 – Cross-site analysis idea #5: *Uniting movement data and epidemiological models to predict pathogen spread and persistence across landscapes* – Mark Wilber

5:00 – Wrap up, propose any additional analysis topics to include on day 3

6:00 - 9:00 - Dinner at Rio Grande (Food starts at 6:30 and is included, drinks throughout by self-pay)

Day 3: Thursday July 25th

8:00-8:30 - Bagels, snacks, coffee (provided)

8:30-8:45 – Introduce concurrent breakout group topics (Kim)

8:45-9:30 – Session 1: Break out group discussions - report back (last 15 min)

9:30-10:30 – Session 2: Break out group discussions - report back (last 15 min)

10:30-10:45 – Coffee break

10:45 - 11:30 – Session 3: Break out group discussions - report back (last 15 min)

11:30 - 12:30 – Session 4: Break out group discussions - report back (last 15 min)

12:30-1:30 – Lunch (catered by Garbanzos Mediterranean, provided)

1:30-2:15 – Session 5: Break out group discussions - report back (last 15 min)

2:15-3:30 – Goals moving forward (plenary)

3:30-on – End early for those traveling Thursday, option to stay for longer discussion

Topics:

Morning:

- Future funding opportunities/grant ideas
 - Kim, David W., Jennifer Hoy-Petersen, Meggan
- Concept article about integration of HD and TS data streams (David can lead)
 - Kim, Meggan, Elias
- Coordination/collaboration on non-SARS-CoV-2 diagnostics and objectives (CWD, BTV, IAV, others?)
 - Kim, Jennifer Hoy-Petersen, Meggan
- Identify highest priority genetics analysis project

Afternoon:

- Methods for scaling up fine-scale transmission inferences and partially observed data to landscape level
 - Kim, David W., Meggan, Elias
- Inferential approaches for jointly leveraging movement and diagnostic data for prediction of disease dynamics
 - Jennifer Hoy-Petersen, David W., Elias
- Cross-site coordination of data access: developing workflow for movement data (Movebank to cleaned up data all in one place with appropriate permissions)
 - David W.
- Coordination of ideas and methods sharing across site-specific studies (grad student/postdoc meeting)
 - Jennifer Hoy-Petersen