

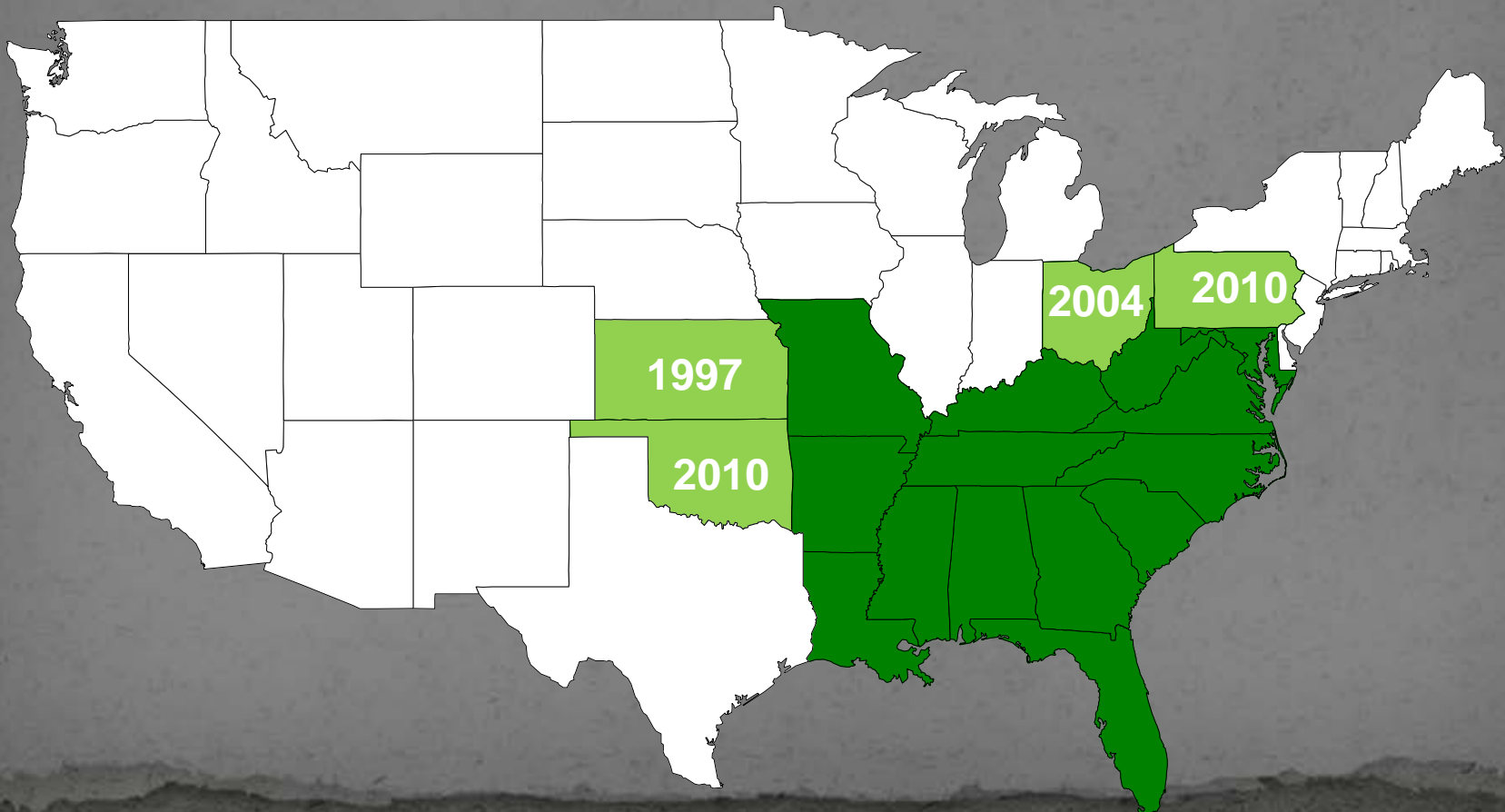
# Current Wildlife Health Issues



John Fischer DVM, PhD  
Southeastern Cooperative Wildlife Disease Study  
College of Veterinary Medicine  
The University of Georgia

# Current Wildlife Health Issues

- SE Wildlife Health Technical Group
- Chronic Wasting Disease (CWD)
- Highly Pathogenic Avian Influenza (HPAI)



# Wildlife Health Technical Group

- Similar to the MAFWA Wildlife and Fish Health Committee
- Members: Wildlife health biologists and DVMs with SCWDS member state agencies
- Discuss individual state issues and shared issues; develop regional approaches to wildlife disease research, surveillance and management
- Annual meetings in Athens, GA (August 19, 2015)
- SCWDS has funds to cover travel expenses for FY16 for member states

# CWD





# Michigan 5/26/2015

- First detection of CWD in a wild deer in Michigan (Ingham County)
- Source: MI DNR



# CWD Research

- Aerosol transmission of CWD to WTD using a dose 20 times lower than oral inoculation
- Vertical transmission-- apparently in utero-- demonstrated in Muntjac deer model



# CWD RESEARCH

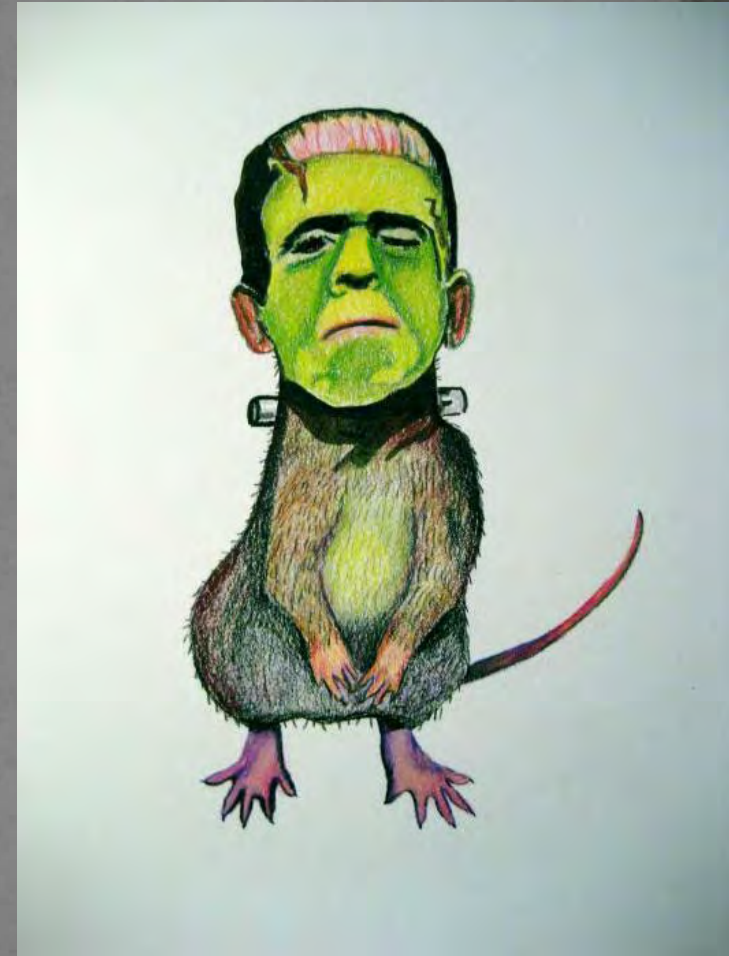
- Vaccine Trial: Survival time prolonged from 602 days in unvaccinated controls to 905 days
- One vaccinated deer remained disease free and RAMALT-ND after 3 years





# CWD RESEARCH: 2015

- February: UCSD researchers identify “amino acids that constitute a substantial structural barrier to CWD transmission to humans”
- May: Re-analysis of humanized mouse tissues from earlier studies detected evidence of CWD infection in 2 of 140 mice. Paper to be published in August 2015

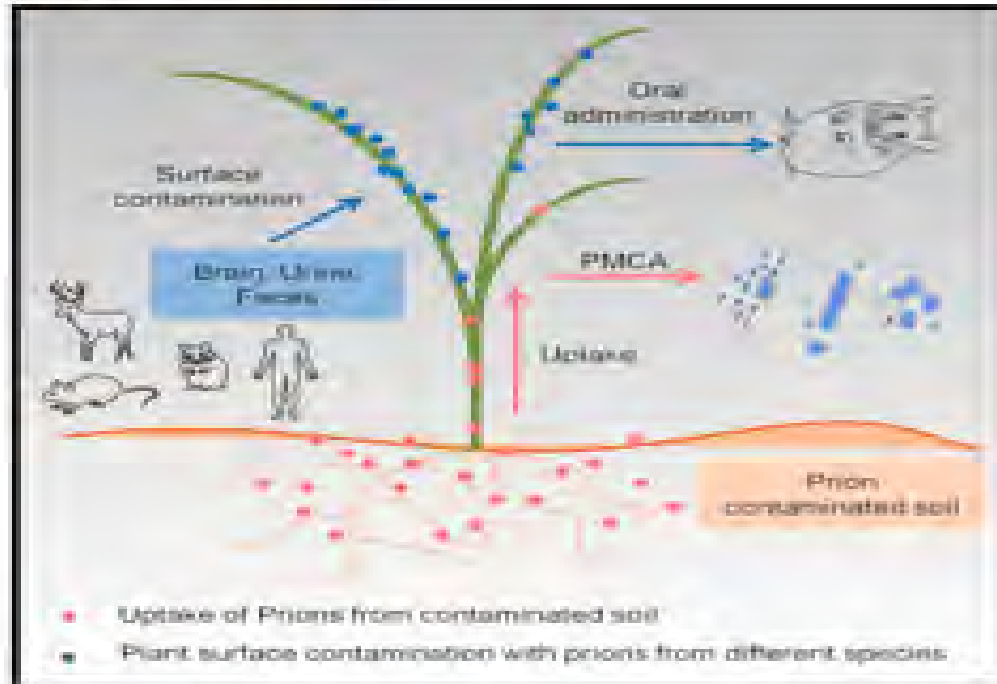






## Grass Plants Bind, Retain, Uptake, and Transport Infectious Prions

### Graphical Abstract



### Authors

Sandra Pritzkow, Rodrigo Morales, ..., Edward Hoover, Claudio Soto

### Correspondence

[claudio.soto@uth.tmc.edu](mailto:claudio.soto@uth.tmc.edu)

### In Brief

Prions are the proteinaceous infectious agents responsible for prion diseases. Pritzkow et al. report that prions from brain and excreta can bind grass plants and remain attached to living plants for a long time and that contaminated plants can infect animals. In addition, grass plants can uptake and transport prions from infected soil.

### Highlights

- Grass plants bind prions from contaminated brain and excreta
- Prions from different strains and species remain bound to living plants
- Hamsters fed with prion-contaminated plant samples develop prion disease
- Stems and leaves from grass plants grown in infected soil contain prions

Pritzkow et al., 2015, Cell Reports 11, 1168–1175

# USDA CWD Rule - 2014

- 5 years of CWD testing of all deaths  $>1$  yr old on farm for herd to be certified as low risk for CWD
- No “certified CWD-free” status
- No testing requirement if animals die off-farm in facilities not in CWD program, unless state requires it



# USDA CWD Rule

Since 2012, animals shipped interstate from certified herds in which CWD later was detected or traced to:

Minnesota 2012, Iowa 2012, Pennsylvania 2012,  
Pennsylvania 2014





# Iowa: Breeding Facility, 2012

- Monitored more than 9 years; dropped from program a few months before CWD found
- Sent deer to Missouri and 13 Iowa herds
- Depopulated in August 2014: 284+/356 deer (79.8%)– delayed by lack of indemnity funds



Source: Iowa DNR

# Pennsylvania, April 2014

- Epidemiological investigations ongoing
- Apparent source herd (CWD+ deer there from 9/2009-10/2012) monitored since 2002
- Dispersal sale in 2013:
  - 79 deer went to 39 PA facilities
  - Deer shipped to 9 states: IA, IL, IN, LA, MO, NY, OH, OK, and WI
- Traces – 1 additional CWD+ deer in another PA herd that also was dispersed; animals shipped to IL, MO, OH and 4 PA herds

Source: PA Dept of AG

# Ohio, 2014-2015

- 10/23/14: CWD+ captive deer in Holmes Co.
- 1 of 43 OH herds quarantined since April 2014  
“...because of a known connection to a captive deer operation in PA that tested positive for CWD earlier in 2014.”
- 6 escaped captive deer (including 2 from affected pen) were killed in Holmes Co by hunters during Ohio deer season – none tested positive





# Wisconsin 6/24/2015

- 7 year old doe died on a breeding farm with 167 deer on 12 acres
- Facility has been quarantined by WI Dept of Agriculture, Trade and Consumer Protection (DATCP)
- Source: DATCP



# Updated June 2015



National Wildlife Health Center  
Madison, Wisconsin  
Updated June, 2015

## Distribution of Chronic Wasting Disease in North America

- CWD in free-ranging populations
- Known distribution prior to 2000 (free-ranging)
- CWD in captive facilities (depopulated)
- CWD in captive facilities (current)

All locations are approximations based on best-available information

# USAHA RESOLUTION, 2014

In view of CWD detection in certified herds, USAHA requests that USDA “...assemble, analyze, summarize and make available all pertinent info from epi investigations of CWD in farmed and wild cervid herds. “





# USAHA RESOLUTION, 2014

Info to include prevalence; demography of CWD+ and NEG animals; duration of monitoring before first detection; numbers of animals on premises tested and not tested; trace-forward and -back results...



# HPAI



# Highly Pathogenic Avian Influenza

- Wild birds (dabblers and shorebirds) are the natural reservoirs of low pathogenicity avian influenza viruses
- HPAI in wild birds is RARE: documented once in terns in S. Africa in 1961
- Since 2003, HPAI viruses in wild birds in Asia, with spread to Europe & Africa in 2005-07 (H5N1)
- HPAI viruses in N. America since December 2014:  
Eurasian H5N8; EUR/AM H5N2; EUR/AM H5N1
- No association with human health issues (unlike the Eurasian H5N1)



# Highly Pathogenic Avian Influenza

- In wild birds in North America for the FIRST time
- Since December 2014 HPAI viruses found in wild waterfowl, wild (and captive) raptors, and/or domestic poultry from NW (WA, OR, CA) to Upper Midwest: MN [105] & IA [75] + SD [10], WI [10])
- BODY COUNT 6/26/2015: Most infections with H5N2
  - 223 domestic flocks affected; mostly turkeys and laying hens
  - Over 48,000,000 birds died or euthanized to control disease
  - 15 states affected
  - New detections have slowed greatly
  - APHIS-VS statements indicate detections may increase this fall as waterfowl migrates

# HPAI in Native Species (75)

- Captive: gyrfalcons and great horned owl
- Wild raptors: Cooper's hawk, peregrine falcon, red-tailed hawk, bald eagle, snowy owl
  - HPAI appears to kill raptors
- Wild waterfowl: pintail, mallard, widgeon, shoveler, snow goose, Canada goose, ring-necked duck, green-winged teal
  - Impact on waterfowl health unclear





# HPAI in Native Species

- Concerns for health impacts on wild turkey
- No reason to suspect their susceptibility to infection and clinical disease would differ from domestic turkey
- Exposure of wild turkey to HPAI is suspected to be less likely (unless mixing with domestic poultry)





# HPAI in Native Species

- What we cannot predict:
  - Impact on wild bird populations
  - Establishment and persistence in wild birds
  - How HPAs will interact/assimilate with established LPAs
  - The spread of HPAI in North America
  - How best to track the spread
  - How the HPAI viruses entered North America
  - Rule out the possibility of human infection



# THE END

