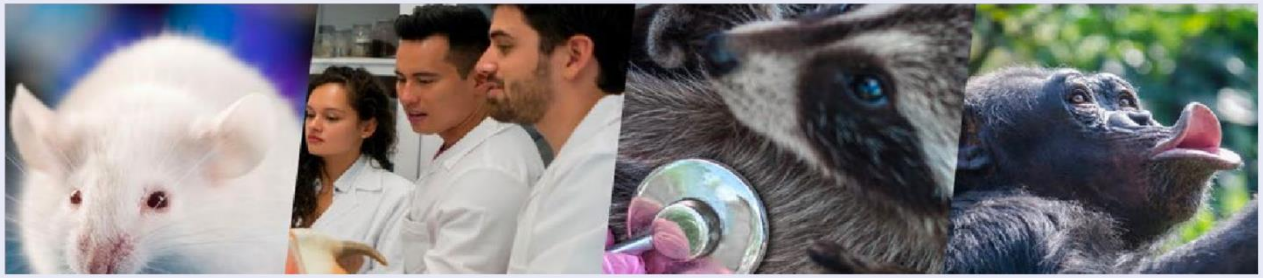
Comparative Medicine Through the One Health approach …

NATIONAL ACADEMIES Sciences Engineering Medicine

Continuing the Conversation: Openness and Global Perspectives in Communicating About Research That Requires the Care and Use of Animals–Webinar

Roundtable on Science and Welfare of Animals Involved in Research



Wednesday, February 18th, 2026 3:00 – 4:00pm ET | 12:00 – 1:00pm PT

Christina Pettan-Brewer MV, DVM, MSc, PhD

Associate Professor and Director

2026 Department of Comparative Medicine
School of Medicine University of Washington

DCM Department of Comparative Medicine UNIVERSITY of WASHINGTON

Cheryl Stroud, DVM, PhD Executive Director

February 14, 2026

UPDATED

Global Call for Nominations and Applications to Serve on the One Health Commission Board of Directors

Application deadline extended to March 15, 2026

Help advance the One Health mission!

Please spread the word!

Forward this message to those who might be interested.

One Health Commission

Volume 13, No. 1, Released February 15, 2026
Sharing news gathered late December 2025, January - early February 2026

One Health Happenings

New to the One Health Conversation?
Learn - What is One Health?

One Health is an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals, plants and ecosystems. It recognizes the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and inter-dependent. The approach mobilizes multiple sectors, disciplines and communities at varying levels of society to work together to foster well-being and tackle threats to health and ecosystems, while addressing the collective need for clean water, energy and air, safe and nutritious food, taking action on climate changes and contributing to sustainable development. The One Health paradigm forges co-equal, all-inclusive collaborations between animal, plant, environmental and human health arenas, i.e. chemical, engineering and social scientists, dentists, nurses, agricultural/horticulturalists and food producers, wildlife and environmental health specialists and many other related disciplines that fall under its purview. The reader can review a compilation of **organizations that are actively working** to advance the One Health paradigm shift and many additional **organizations and individuals** that declare support for the

https://www.onehealthcommission.org

kcpb@uw.edu

#SEE_GOODNESS #SEE_LIGHT #SEE_GRATITUDE

Oneheathbrasil.com /ECOHA
OHLAIC kcpb@uw.edu

Klaisy Christina Pettan-Brewer
MV, MSc, DVM ,3 Post Doctorates, One Health PhD UW/WSU/UFPR – WILDLIFE/HUMAN DISEASES '
Senior Veterinarian, Director , Associate Professor and Senior Researcher
Affiliated Associate Professor, School of Public Health
University of California Davis (1988-1996), CDC Atlanta EID Fellow (1997-1998)
Centenary University /Bronx Zoo – West Nile Virus (1998-2020)
School of Medicine 2021 – Present
Department of Comparative Medicine
– HUMAN AND ANIMAL HEALTH SURVEILLANCE
University of Washington , Seattle WA USA
One Health implementation in 2012 Latin America
WVA - One Health Brazil Latin America- since 2015
One Health Fulbright Scholar – Ambassador
UW Center for One Health Research – COHR 2013
UW Center for Microbiome (CMiST)
ONE HEALTH LATIN AMERICA – OHLAIC CYTED ONE HEALTH BRASIL
One Health Commission, One Health Initiative
Eco Health Alliance, One Health Platform
FRONTIERS One Health Special Edition Chief Editor 2021
World Veterinarian Association One Health Special Group 2022
International Alliance for Health Risks and Wildlife Trade Steering Com 2022
CABI One Health Journal Senior Editor and Editorial Board Group Member 2022
UNITED NATIONS NATURE FOR HEALTH ONE HEALTH EXPERT (UNEP)
ONE HEALTH, ONE OCEAN SPECIAL 2024 CABI OH JOURNAL

ABRASUNI
Associação Brasileira de Saúde Única
nature4health.org
NATURE4HEALTH

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

UNIVERSITY OF WASHINGTON

United Nations

PREZODE
Preventing zoonotic disease emergence

PREZODE - One Health and Preventing Zoonotic Diseases Emergents

https://www.nationalacademies.org/projects/DELS-ILAR-22-03/event/46280

Biodiversity, Conservation and Disease Regulation

Chapter | 6 January 2025

2

Comparing One Health and Ecohealth with Other Integrated Approaches to Health

Authors: Gillian Penn, Christina Pettan-Brewer, Neil Anderson, Margarida Simões, Hans Keune, Thomas Jaenisch AUTHORS INFO & AFFILIATIONS

Publication: Principles of One Health for a better planet • pp. 30-51 • https://doi.org/10.1079/9781800623002.0003

718

PDF/EPUB

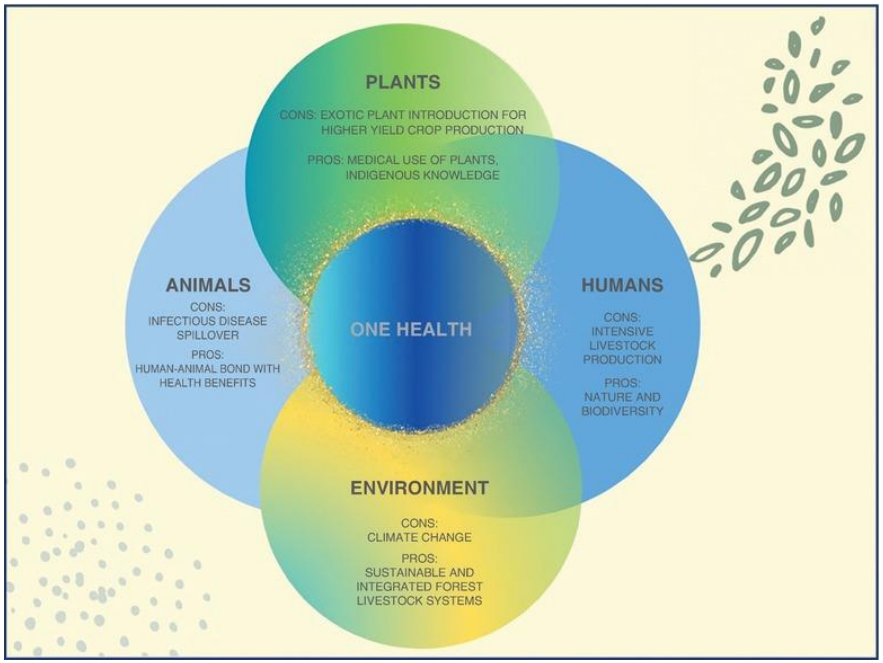


Fig. 2.1. Venn diagram showing the pros and cons relating to plants, animals, humans and environment viewed through the One Health lens.

https://www.standard.co.uk/news/health/bird-flu-first-human-case-exposure-animals-us-b1181105.html

SCAN ME

FREE E BOOK COPY

https://www.cabidigitallibrary.org/doi/10.1079/9781800623002.0000

Network for Ecohealth and One Health

One Sustainable Health for All

Comparative Medicine Through the One Health approach …

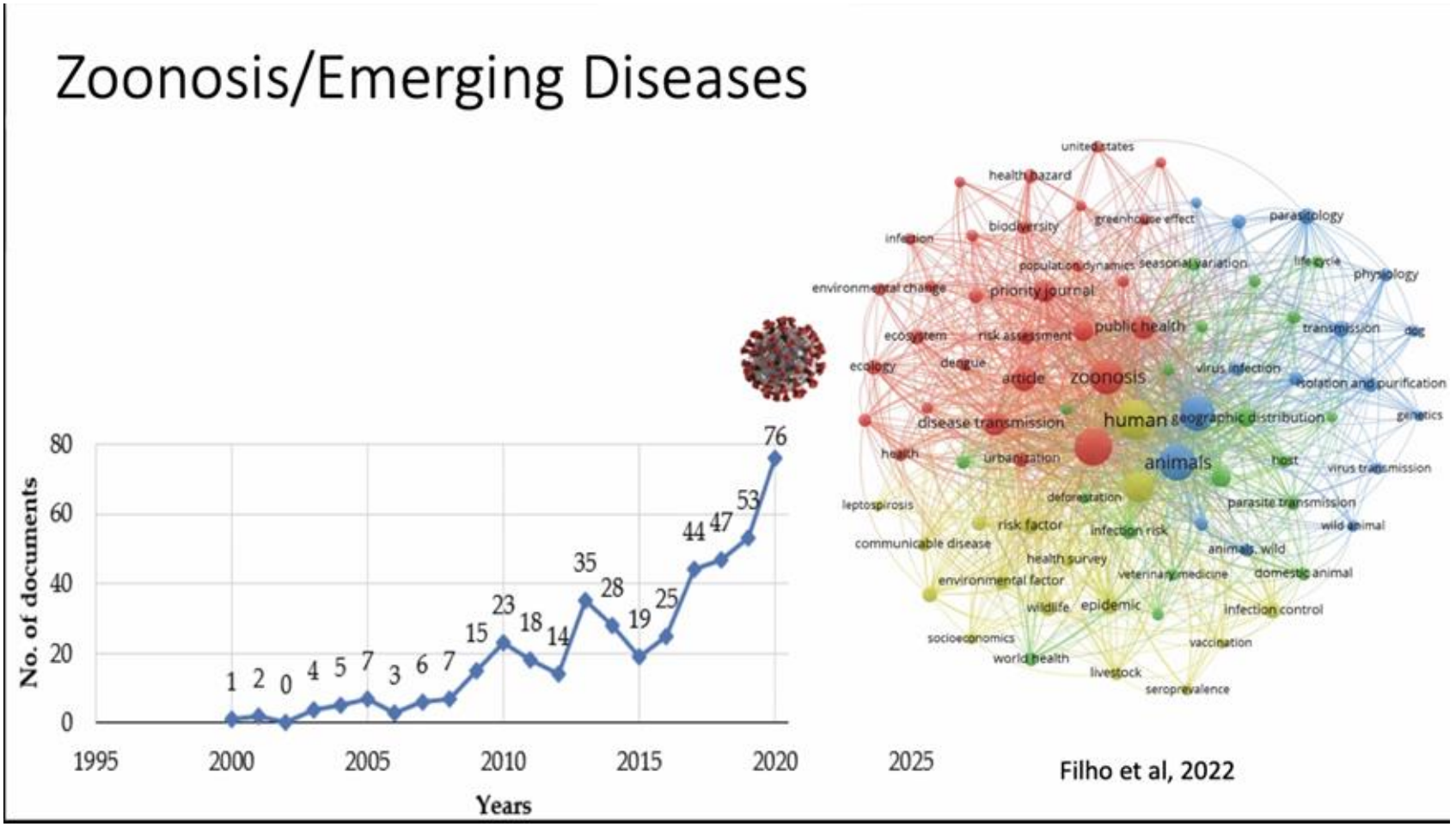
Rodent Health Monitoring and Infectious Diseases Surveillance

A surveillance system for detecting adventitious infectious agents which may adversely affect the health of research rodents and/or compromise research results.

Christina Pettan-Brewer MV, DVM, MSc, PhD
Associate Teaching Professor and Director

2026 Department of Comparative Medicine
School of Medicine

Zoonosis/Emerging Diseases



A Review of Concepts, Definitions, and Bibliometrics. Filho et al, 2022

UW RHMP VISION STATEMENT

“We advance biomedical research and strengthen Global and One Health by transforming rodent (animal) health monitoring into a proactive, AI data-driven, and research collaborative system that ensures scientific integrity, promotes human and animal health/welfare, and supports infectious diseases control and pandemic prevention worldwide.”

UNIVERSITY OF WASHINGTON, DEPARTMENT OF COMPARATIVE MEDICINE ORGANIZATIONAL CHART

VICE PROVOST OF 3R'S

ATTENDING VETERINARIAN

OAW CONTACT

DEAN OF SOM

DCM CHAIR

TRANSGENICS REDERIVATION

10
- *IN VIVO* SERVICES
- TEST S. FEMALES
- SPERM/HEALTH REPORTS

BYPASS QUARANTINE

ABSL 3

11 APPROVAL OF IMPORTS

BYPASS QUARANTINE

VET SERVICES

8 OUTBREAK

9 TREATMENT

RHMP

FINANCES

AQUATICS PROGRAM & FBM

PATHOGENS ADVISORY COUNCIL

1 TRAINING

CLERKS

RESIDENTS

INTERNATIONAL PROGRAM ROTATION

2 EXPORTS

EAD MONITORING

- EHM SAMPLING (EAD)
- BIO SAMPLES SHIPPING
- EAD DATA MANAGEMENT
- CHARGES EXTRA HOURS
- RACK WASH CALENDAR RELEASE
- SAMPLING CALENDAR

VETERINARIAN ON DUTY

APPROVED VENDORS:

3 ANIMAL PURCHASE

NON-APPROVED VENDORS:

4 IMPORTS/AOPS
- HEALTH REPORTS
- FACILITY DESCRIPTION
- OUTBREAK HISTORY

5 TRANSPORTATION APPROVAL TO UW

6 QUARANTINE
- APPROVAL/SAMPLING
- RELEASE ANIMALS TO FACILITIES
- TRANSPOT TO OUTSIDE INSTITUTION
- DATA MANAGEMENT
- OUTBREAK PREVENTION
- CRUISIN

7 FACILITY MANAGER/SUPERVISOR

- PATHOGENS EXCLUSION (SPF)

HEALTH AND WELLBEING

UNIVERSITY OF WASHINGTON 1861 LVX SIT

DCM Department of Comparative Medicine UNIVERSITY of WASHINGTON

Rodent Health Monitoring and Infectious Diseases Surveillance

Hands On and Administrative TEAM

Peter Waldron
Amy Martinson

DCM Pathogens Committee – Veterinarians

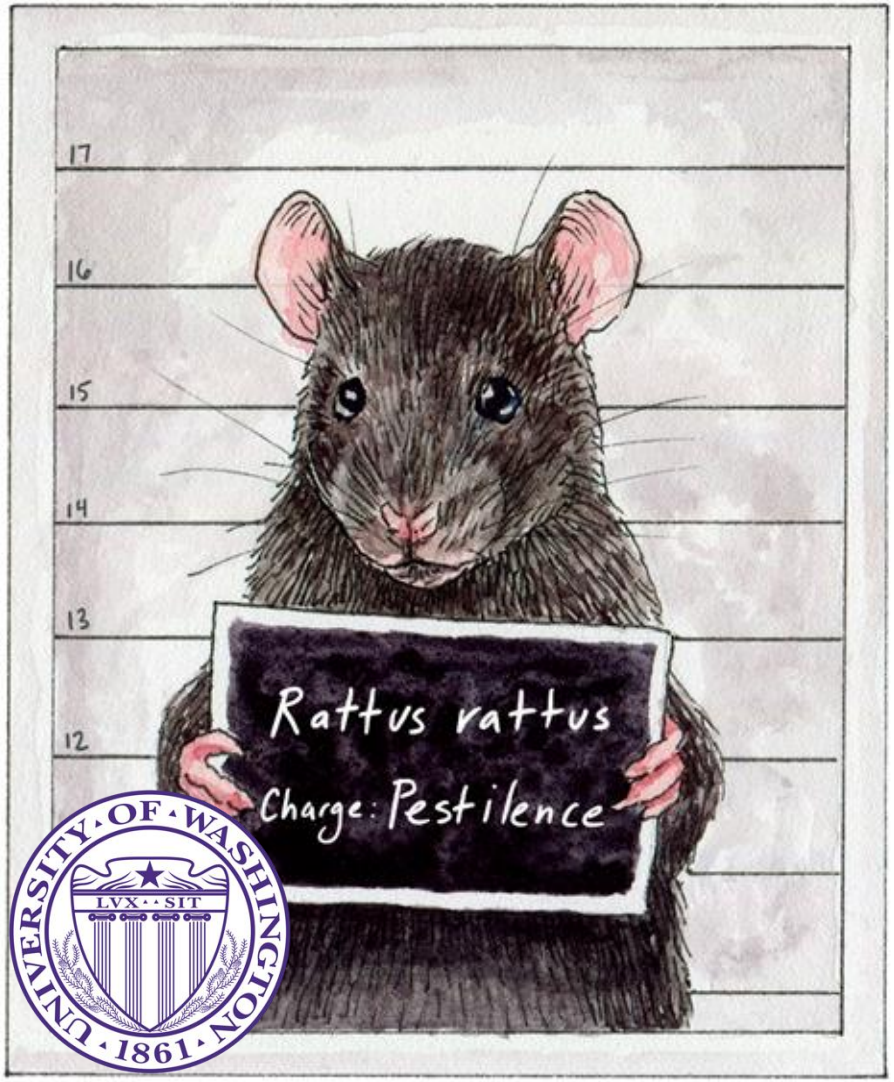
Isaac Barber- Axthelm
Jourdan Brune
Brian Iritani
Charles Hsu
George Sanders
Nick Reyes

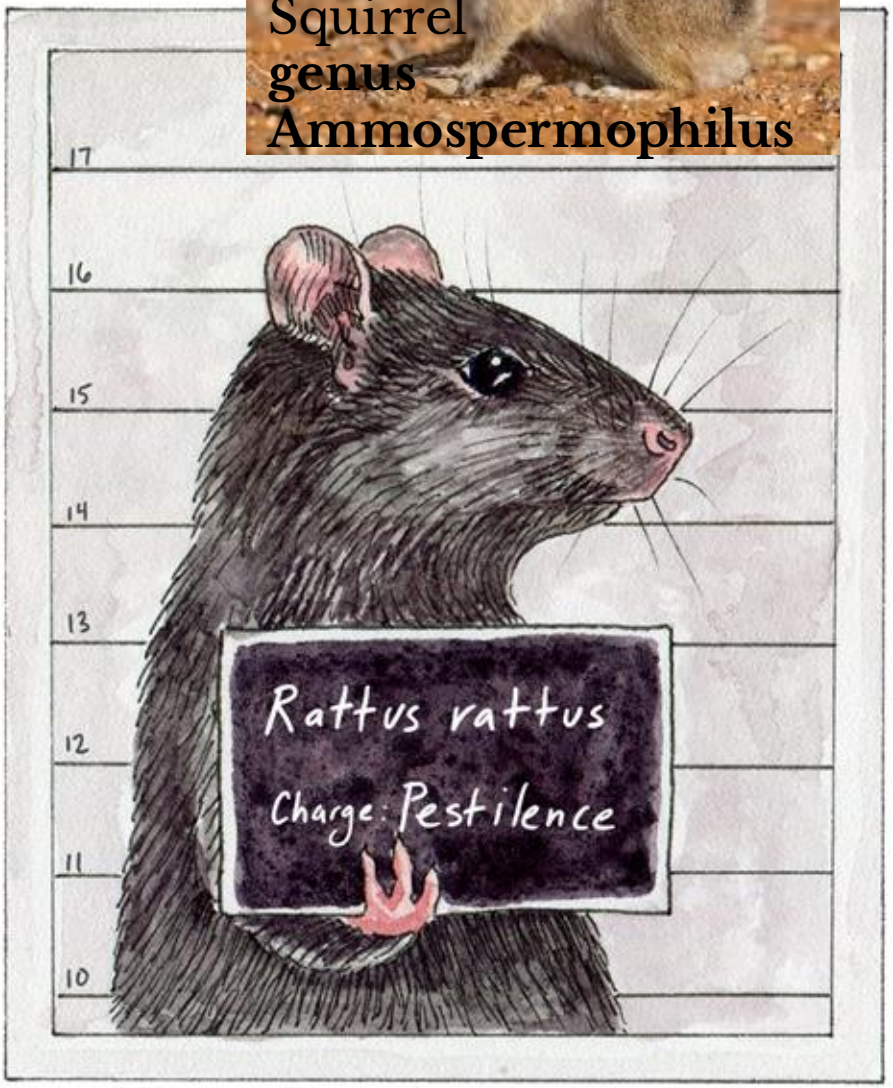
CHAIR : Raimon Duran-Struuck

DCM Department of Comparative Medicine
UNIVERSITY of WASHINGTON

Order Rodentia

Antelope Ground Squirrel
genus Ammospermophilus





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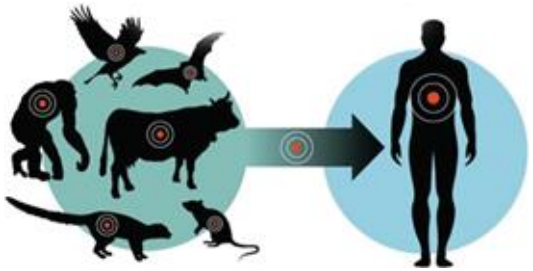
Why do lab animal facilities exclude certain pathogens?

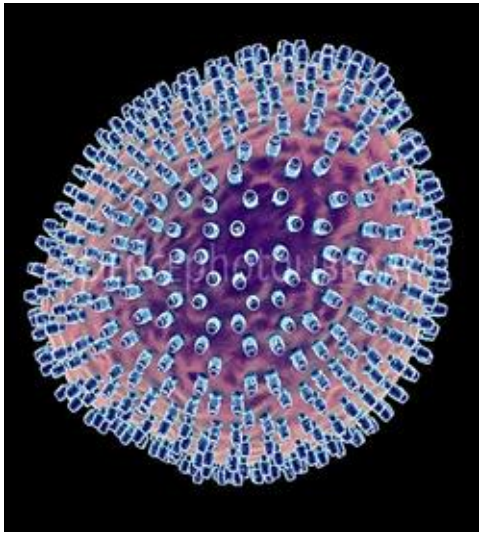
Can cause illness and mortality in mouse colonies



Some rodent pathogens are zoonotic diseases

Pathogens can confound research results, increase experimental variability

https://quizlet.com/4362647/parasite-flash-cards/



http://www.sciencephoto.com/medi/415015/view

http://www.idexxbioresearch.com/radil/inside/Whats_New/Help_for_Your_Pinworm_Outbreak_/index.html

Agents tested for & excluded from SPF rodent colonies at the University of Washington

EXCLUDED AGENTS: MICE

Name	Trimester panel	Annual panel	Quarantine panel
Pinworms	Yes	Yes	Yes
Fur mites	Yes	Yes	Yes
MHV	Yes	Yes	Yes
MPV	Yes	Yes	Yes
MVM	Yes	Yes	Yes
MRV (EDIM)	Yes	Yes	Yes
M. pulmonis		Yes	
Reo3		Yes	
Sendai		Yes	
PVM		Yes	
TMEV		Yes	Yes
Ectromelia		Yes	
LCMV		Yes	
MAV 1 & 2		Yes[1]	
MCMV		Yes[1]	
MNV	[2]	[2]	Yes[2]
Helicobacter	[2]	[2]	
Tritrichomonas	[3]	[3]	
C.bovis	[4]	[4]	Yes[4]

LCMV signs & symptoms

Human

- Subclinical
- Flu-like 1st phase
- Neurologic 2nd phase (subset of individuals)
- Possibly fatal in immunosuppressed persons.
- Birth defects

Mouse

- Generally subclinical
- Depends on age at infection
- Older animals may show nonspecific signs
- If infected *in utero*: runting, lifetime, high-titer viral shedding.
- Virus shed in urine, feces, saliva, nasal secretions.

Corynebacterium bovis: **short, gram-positive, rod**	
Clinical signs:	Hyperkeratosis, especially in immunodeficient mice, scaly skin, alopecia, keratoconjunctivitis
Why is it excluded?	Severe disease may cause death in suckling mice
How does it spread?	Colonizes skin, shed in feces, transmission by direct contact, fecal-oral, aerosol
How to diagnose?	PCR of skin swab or feces
How to control outbreak?	Difficult, can be endemic in nude mouse colonies, human upper respiratory tract is a source, readily contaminates environment, antibiotic treatment is unrewarding

Laboratory Animal Medicine, Third edition (2015).

Comparative Medicine Through the One Health approach …

PREDICT, PREVENTION, PREPAREDNESS

AND SAVING LIVES

Rodent Health Monitoring and Infectious Diseases Surveillance

August 12, 2025

RE: U Washington, Re: LTM - Results Report for Order #2025038986 - Notes: SLU3.1 E065 (Helico-Free) F...

Long, Ed <Ed.Long@orl.com>

Hi Christina,

Listed below, please find the copy numbers for order 2025038986. Amplification for these samples were reproducible for two extractions and PCR runs. These were some of the strongest Helicobacter positive samples in the test batch. We typically detect Helicobacter in the hundreds of thousands or even millions of copies in endemically infected animals, so these copy numbers would be typical.

Our standard practice is to typically provide estimated copy numbers instead of Ct scores, since it is rather easier to gauge the positivity of the sample. A score by itself is not meaningful without context since the positivity of the sample is based on the Ct score of the positive control. We use the Ct score of any test sample that has amplified to estimate the relative number for that test sample. The Ct score can also vary from run to run, and our testing is non-GLP so samples are tested in a single reaction well. In this case, copy number is more useful.

We have established cutoffs for each agent and each sample type, and these cutoffs are based on our extensive experience as a high-throughput commercial diagnostic laboratory. In addition to reviewing the Ct score provided by the cycler software, we also review the amplification curve to ensure that it is a typical sigmoidal shape which represents what we believe to true amplification. Since cutoffs are specific for our protocol and assays, and can change when we revise/improve our testing, we generally don't share the cutoff values with external entities.

If any of these results are unexpected, please resubmit a sample that matches your original sample submission for confirmation testing on a 1:1 basis. Please let us know if you need anything else.

Kind regards,
Ed

Ed Long, PhD
Scientist I, Laboratory R&D
Research Animal Diagnostic Services | Charles River

7-A PkRk-012		7-B Weaning		7-C Weaning		7-D Weaning	
BREEDER PKR KO DOB 10-2-24 1 Male 8401 PKR -/- 2 F 8404 and 8405	10	1F1T2 K0 PKR KO DOB: 5/28/25 5F SOURCE: 335521	11	1F1T2 K0 PKR KO DOB: 5/28/25 4M SOURCE: 335521	12	TOGGLE PKR KO DOB 7/11/25 2? SOURCE: 335521	13

Order	Sample #	Sample Type	Assay	Est. copy number/Rxn
2025038986	10	Fecal Pellet	Helicobacter genus PCR	15,199
2025038986	10	Fecal Pellet	H. mastomyrinus	351
2025038986	10	Fecal Pellet	H. bilis	14,175
2025038986	11	Fecal Pellet	Helicobacter genus PCR	756,463
2025038986	11	Fecal Pellet	H. mastomyrinus	57,224
2025038986	11	Fecal Pellet	H. bilis	8,111
2025038986	12	Fecal Pellet	Helicobacter genus PCR	46,416
2025038986	12	Fecal Pellet	H. mastomyrinus	2,310
2025038986	12	Fecal Pellet	H. bilis	4,642
2025038986	13	Fecal Pellet	Helicobacter genus PCR	572,237
2025038986	13	Fecal Pellet	H. mastomyrinus	16,298
2025038986	13	Fecal Pellet	H. bilis	132,194

Rodent Health Monitoring and Infectious Diseases Surveillance

Journal of the American Association for Laboratory Animal Science
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Vol 59, No 2
March 2020
Pages 156–162

Adoption of Exhaust Air Dust Testing in SPF Rodent Facilities

Christina Pettan-Brewer,* Riley J Trost, Lillian Maggio-Price, Audrey Seamons, and Susan C Dowling

Reliable detection of unwanted microbial agents is essential for meaningful health monitoring in laboratory animal facilities. Most rodents at our institution are housed in IVC rack systems to minimize aerogenic transmission of infectious agents between cages. The most commonly used rodent health monitoring systems expose live sentinel rodents to soiled bedding collected from other rodent cages on IVC racks and subsequently test these soiled-bedding sentinels for evidence of infection with excluded agents. However, infectious agents might go undetected when using this health surveillance method, due to inefficient organism shedding or transmission failure. In 2016, our institution switched the health monitoring methodology for the majority of our SPF rodent colonies to real-time PCR testing of environmental samples collected from the exhaust plenums of IVC racks. Here we describe our rationale for this conversion, describe some interesting health monitoring cases that arose soon after the conversion, and discuss a potential problem with the conversion—residual nucleic acids. We compared cost and implementation effort associated with 2 sampling methods, sticky swabs and in-line collection media. We also compared the ability of these 2 sampling methods to detect 2 prevalent microbes in our facilities, *Helicobacter* and murine norovirus. Our institution-wide switch to health monitoring by real-time PCR assay of exhaust air dust samples thus has provided a sensitive, simple, and reliable approach for maintenance of SPF conditions in laboratory rodents and has matically reduced the use of live sentinel animals.

previations: EAD, exhaust air dust; LCMV, lymphocytic choriomeningitis virus; MNV, murine norovirus

OI: 10.30802/AALAS-JAALAS-19-000079

EHM = Environmental Health Monitoring

WHAT?

Replaced soiled bedding **live sentinels** with PCR of IVC rack exhaust dust.

WHY?

Improve detection of **excluded infectious agents.**

Eliminate risk of receiving contaminated sentinels. (Vendor sentinels infected with MPV in 2011.)

Saved money & labor.

3Rs: Reduce, Refine, Replace!

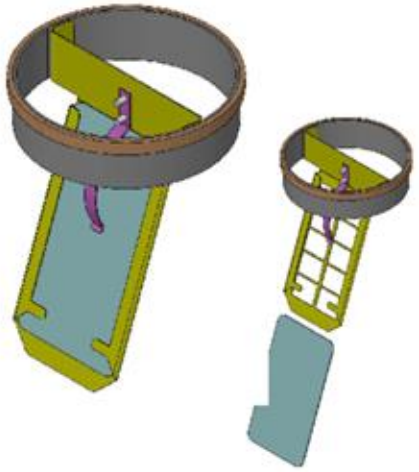
Sentinel Monitoring Program

Every week, sentinels are exposed to dirty bedding from all cages on rack

Sentinels

Exhaust Dust Collection Capabilities – Health Testing

- Collar mounted dust collection media
- Geometrically oriented to maximize collection without causing excessive pressure build up
- Special filter media to increase dust collection
- Minimal handling required
- Acceptable for 3 month collection period
- Initial testing showed correlation of swabs to dust filter data
- Alpha test results due in January 2015
- Soliciting Beta tests sites for trial Q1/Q2 2015
- "Using Allentown racks there is no reason to continue using sentinel animals"



Allentown
Partners in Quality. Partners in Service. Partners in Research

UNIVERSITY OF WASHINGTON · 1861 · LVX · SIT

Installing the Sentinel™ system

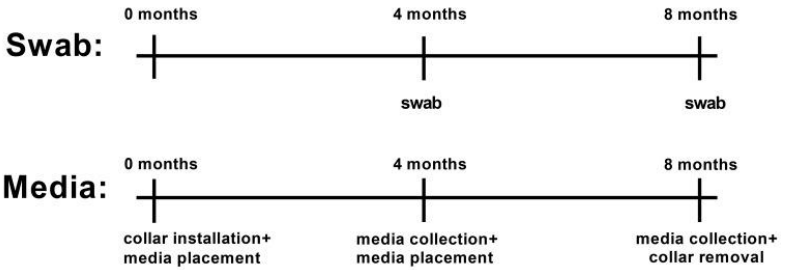
EAD filter media and swabs detect agents more readily than soiled bedding sentinels

Table 1: Percentage of detected agents

Agents	Soiled bedding sentinels	Interceptor (N=15)	Prefilter swabs (N=7)
Virus			
MNV	42,3%	46,7%	42,86%
bacteria			
Pasteurella pneumotropica-Jawetz	3,8%	53,3%	85,71%
Pasteruella pneumotropica-Heyl	0,0%	60,0%	57,1%
Helicobacter genus	23,1%	100,0%	100,0%
Helicobacter hepaticus	7,7%	60,0%	85,7%
Helicobacter ganmani	0,0%	80,0%	100,0%
Helicobater mastomyrinus	0,0%	46,7%	57,1%
Helicobater typhlonius	0,0%	73,3%	100,0%
Pseudomonas aeruginosa	7,7%	0,0%	42,9%
Staphylococcus aureus	0,0%	20,0%	28,6%
parasites			
Myocoptes musculinus	0,0%	6,7%	14,29%
Entamoeba	3,8%	40,0%	28,57%
Average	7,4%	48,9%	61,9%

Bad Good

Jensen, et al. 2013. J Am Assoc Lab Anim Sci. 52(1):28–33
Duran et al. Comparative Study of EAD testing and traditional bedding sentinels for health monitoring in IVC rack systems.



J Am Assoc Lab Anim Sci. 2020 Mar;59(2):156–162. doi: 10.30802/AALAS-JAALAS-19-000079

Table 1.

2016 testing of dirty racks compared with racks washed once (swab sampling)

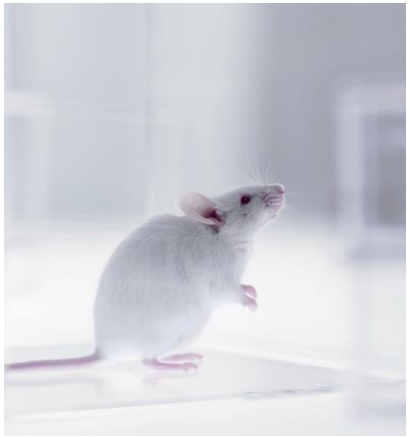
	Dirty racks No. positive (%) (total n = 212)	Washed racks No. positive (%) (total n = 67)
Helicobacter spp.	198 (93%)	5 (7%)
Murine norovirus	164 (77%)	2 (3%)

3 swabs per rack

Cost comparison of SBS vs EAD monitoring

	Annual cost (US$)	
Type of cost	SBS	EAD
Animal ordering	15,084	not applicable
Animal shipping	3,876	not applicable
Animal maintenance	137,642	not applicable
Technician time	7,190	1,683
Diagnostic testing	449,629	450,938
Total annual cost	613,421	452,621

Lurchins KR, et al. J Am Assoc Lab Anim Sci. 2020 Sep 1;59(5):508-511.PMID: 32591028



DCM
Department of Comparative Medicine
UNIVERSITY of WASHINGTON

28,990 LIVES SAVED

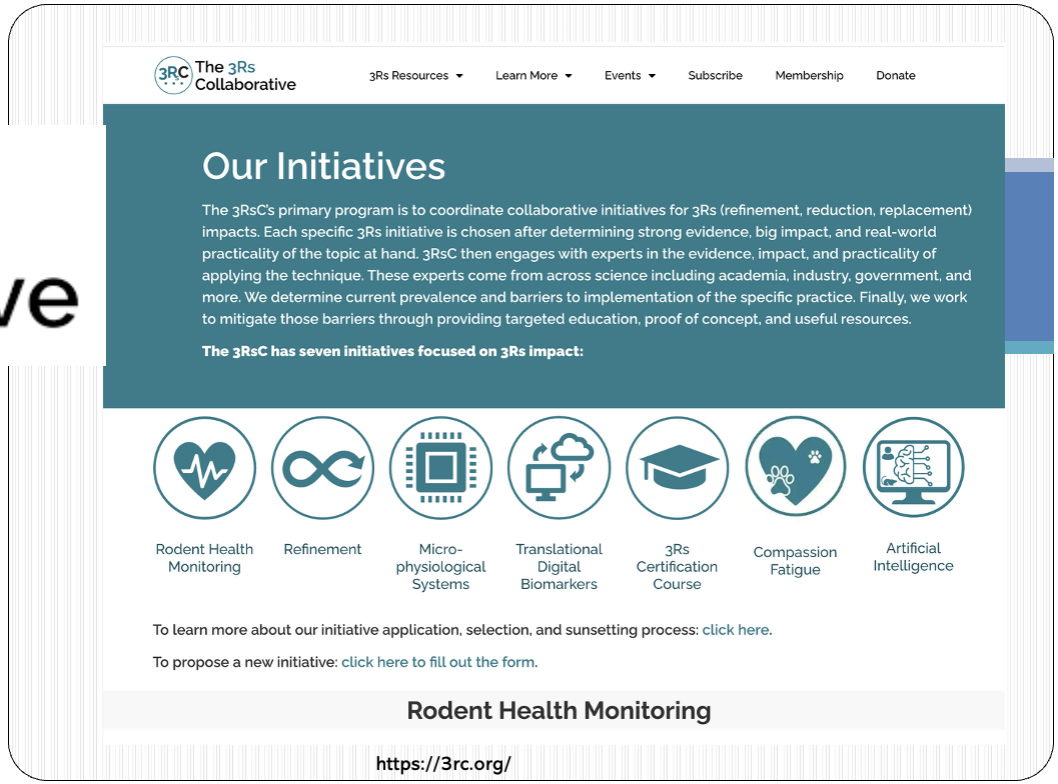
Since 2015 DCM RHMP have saved over **28,990 live sentinel rodents** at the UW DCM with the EHM Methodology.

We are indeed Pioneers and an example 3Rs Research Institution

DARE 2 CARE
UNIVERSITY of WASHINGTON
Compassion in Science

The 3Rs Collaborative

https://3rc.org/



The 3Rs were first defined by Russell and Burch in their book ***The Principles of Humane Experimental Technique*** . The NC3Rs has updated the definitions in line with common scientific parlance to highlight the importance of the 3Rs to modern research practices.

	Basic	Updated
Replacement	Avoiding or replacing the use of animals in areas where they otherwise would have been used.	Accelerating the development and use of predictive and robust models and tools, based on the latest science and technologies, to replace the use of animals in addressing important research questions where they would have otherwise have been used.
Reduction	Minimising the number of animals used consistent with scientific aims.	Appropriately designed and analysed animal experiments that are robust and reproducible, and add to the knowledge base.
Refinement	Minimising the pain, suffering, distress or lasting harm that research animals might experience.	Advancing laboratory animal welfare by exploiting the latest *in vivo* technologies to minimise pain, suffering and distress and improve understanding of the impact of welfare on scientific outcomes.

https://nc3rs.org.uk/who-we-are/3rs

› COMPASSION IN SCIENCE › MISSION, VISION, VALUES AND OATH

MISSION, VISION, VALUES AND OATH

DARE 2 CARE'S MISSION:

To assist all members of the research team to recognize compassion fatigue and raise awareness, provide tools, strategies and resources for managing human emotions in working with and caring for laboratory animals.

DARE 2 CARE'S VISION:

To encourage and implement not only a university-wide belief, but also a global acceptance that Compassion Fatigue in Laboratory Animal Professionals is prevalent and can be prevented through education, support systems, and self-care.

DARE 2 CARE
UNIVERSITY of WASHINGTON
Compassion in Science

RECENT POSTS

Dare 2 Care: Compassion in Science Second Annual Commemoration

Reflections with Dr. Michele A. Basso | March 25, 2024

Practicing Gratitude

https://sites.uw.edu/d2c/mission-statement/

To date we have saved over 30,000 sentinel rodents at the UW DCM with the EHM Methodology. We are indeed Pioneers and an example 3Rs Research Institution February 18th 2026

0CTOBER 27 2022

unep-aewa.org/en/news/preventing-pandemics-together-nature4health-applications-now-welcome

Preventing Pandemics Together - Nature4Health Applications Now

Healthy planet, healthy people © Canva.com

Bonn, 18 August 2022 – The Nature for Health (N4H) initiative is currently inviting low-and middle-income countries to apply for technical support in implementing preventative One Health measures around the world.

N4H is a global initiative, working to reduce future pandemics and related health risks by fostering locally developed and integrated approaches to secure the health of people, animals, and the environment at large.

Supported by the Government of Germany, the initiative brings together leading UN agencies, Intergovernmental Organizations and civil society groups in the field of environment and health.

The N4H is currently looking for country partners to implement preventative measures with the technical support of the N4H Consortium. The consortium will support interested, eligible countries/ jurisdictions (including sub-national or regional entities) in implementing One Health approaches.

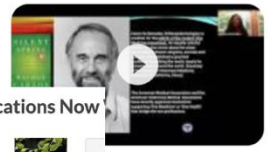
Challenges in the IMPLEMENTATION AND ONE HEALTH research findings into policy in Latin American countries

- EXCESSIVE BUREAUCRACY
- POWER AT THE TOP
- POLITICS IN THEIR EXTREMES

GLOBAL ONE HEALTH

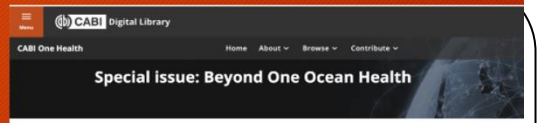
www.youtube.com › watch

ONE HEALTH, ONE PLANET - ONE HEALTH BRASIL 2021



Contact : Prof Dr Christina **Pettan-Brewer** Lectures and Videos For Global **One Health** Educational Purpose Only School of...

YouTube · One Health Brazil - Latin America · Nov 3, 2021



CABI

Call for papers

Preventing Pandemics Together - Nature4Health Applications Now

Healthy planet, healthy people © Canva.com

NATURE4HEALTH
Preventing pandemics together

One Health Summit

7 April 2026

Ecosystems, plants, animals, and humans: an Action and Solutions Summit to Better the Health of All Life and the Planet

Berlin 23'

PREZODE

International

Alliance against Health Risks in Wildlife Trade

UNEP N4H

https://www.amjmed.com/article/S0002-9343(07)01082-0/

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CONNECTING HUMAN, ANIMAL, AND ENVIRONMENTAL HEALTH

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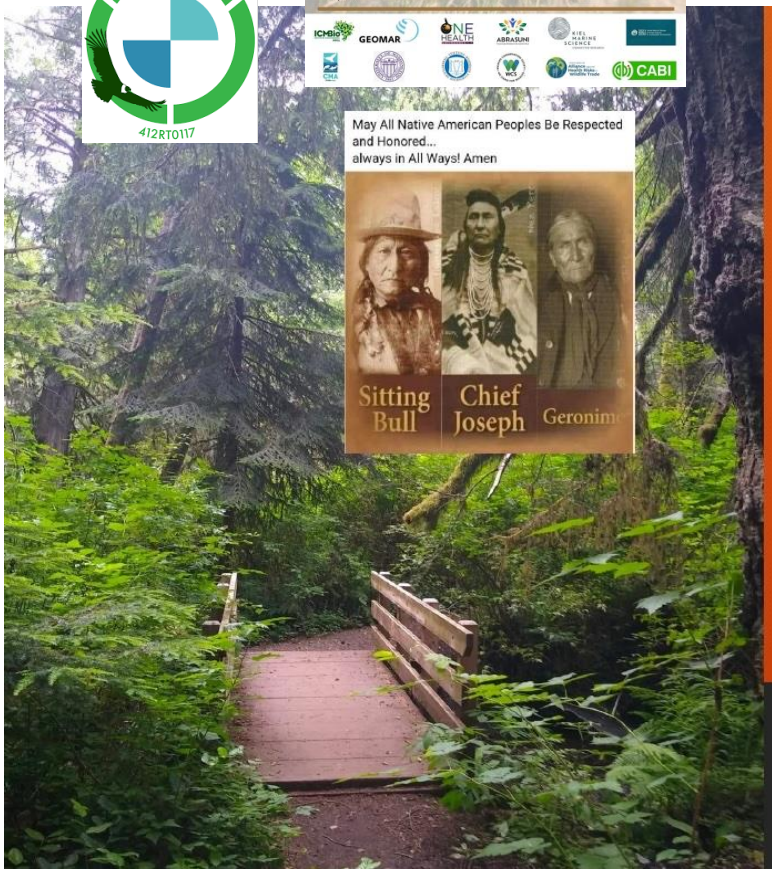

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NATIONAL ACADEMIES
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