



One Health Initiative: Collaborative Practice

Autonomous pro bono team:

Laura H. Kahn, MD, MPH, MPP

Bruce Kaplan, DVM

Thomas P. Monath, MD, FACP, FASTMH

Jack Woodall, PhD

Lisa A. Conti, DVM, MPH

<http://www.onehealthinitiative.com/>

Human-Animal Connection

Food (wild and domesticated), transportation, sport, research.....and companionship



The Human-Animal Connection

- 57% US homes have pets¹
- More households with pets than children (46%)²
- 93% of pet owners would risk their life for their pet³
- 50% of pet owners would choose their pet as their single companion if stranded on a deserted island³



1. AVMA Market Research Statistics; 2007

2. US Census

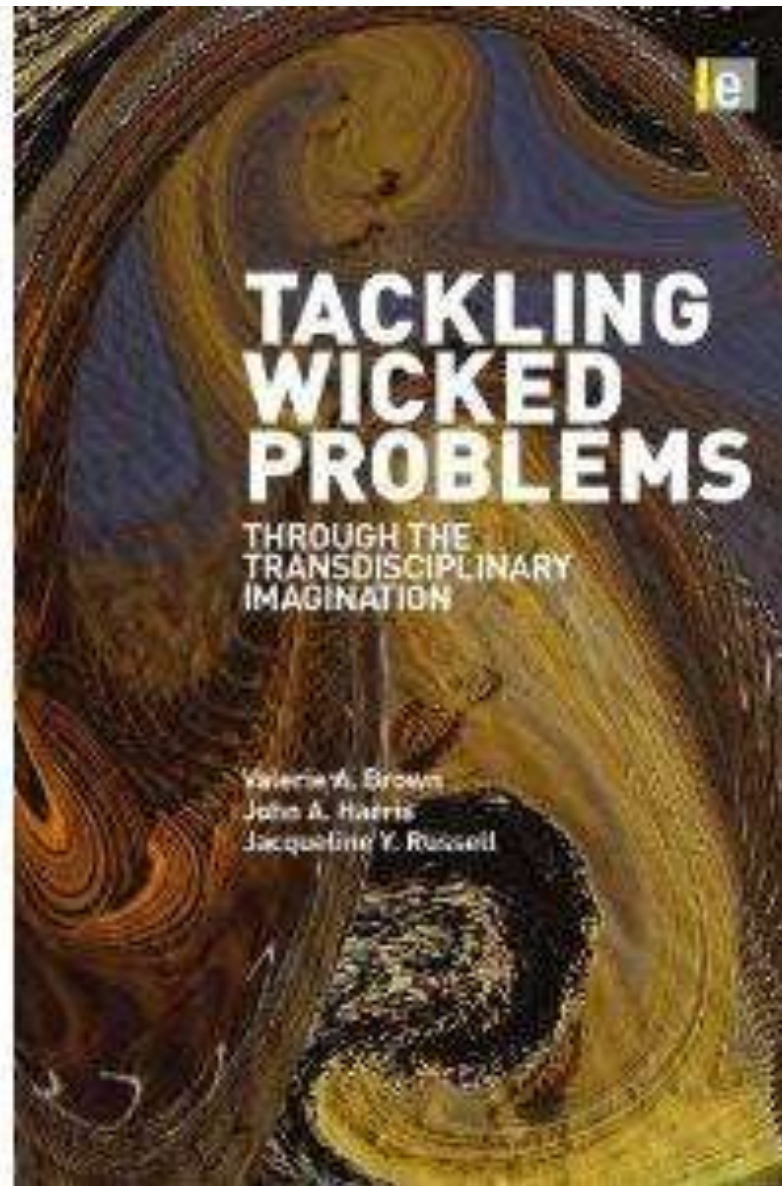
3. Amer Animal Hosp Assoc "Pet Owner Survey"; 2004



One Health

The collaborative effort of multiple disciplines working locally, nationally, and globally to attain optimal health for people, animals and our environment.





Results of a One Health Approach

Dramatic, rapid increase in scientific knowledge

Improved medical education and clinical care

Enhanced public health efficacy

Accelerated biomedical research discoveries

-Kaplan



One Health Initiative team



Dr. Laura Kahn



Dr. Bruce Kaplan



Dr. Tom Monath



Dr. Jack Woodall



Dr. Lisa Conti

- Drs. Laura Kahn and Bruce Kaplan teamed up in 2006
- Dr. Tom Monath joined in 2007
- One Health Initiative website went live 2008
- Dr. Jack Woodall joined in 2009
- Dr. Lisa Conti joined in 2011



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Search

See Pro Med link for additional search function.

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- Supporter Endorsements
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One Health Initiative Website Advisory Board (Hon.)

Established: December 1, 2010

Larry R. Anderson, DVM, MD - Sumner County Family Care Center, PA, Wellington, Kansas (USA)

Steven W. Atwood, VMD, MRCVS, MD, MPH - Animal Health Care Associates, West Tisbury, MA (USA)

B. Sonny Bal, MD, JD, MBA - Associate Professor, Department of Orthopaedic Surgery, University of Missouri School of Medicine (USA)

Donald S. Burke, MD - Dean, Graduate School of Public Health, University of Pittsburgh (USA)

Carina Blackmore, DVM, PhD - State Public Health Veterinarian, Florida Department of Health (USA)

Craig N. Carter, DVM, PhD - Director, University of Kentucky, Veterinary Diagnostic Laboratory (USA)

Nancy Chaney, RN, BA, MS - Mayor City of Moscow, Idaho, President of the Association of Idaho Cities, Board member of the Directors of the National League of Cities (USA)

James L. Cook, DVM, PhD, Diplomate ACVS - William & Kathryn Allen Distinguished Professor in Orthopaedic Surgery, Director, Comparative Orthopaedic Laboratory, University of Missouri (USA)

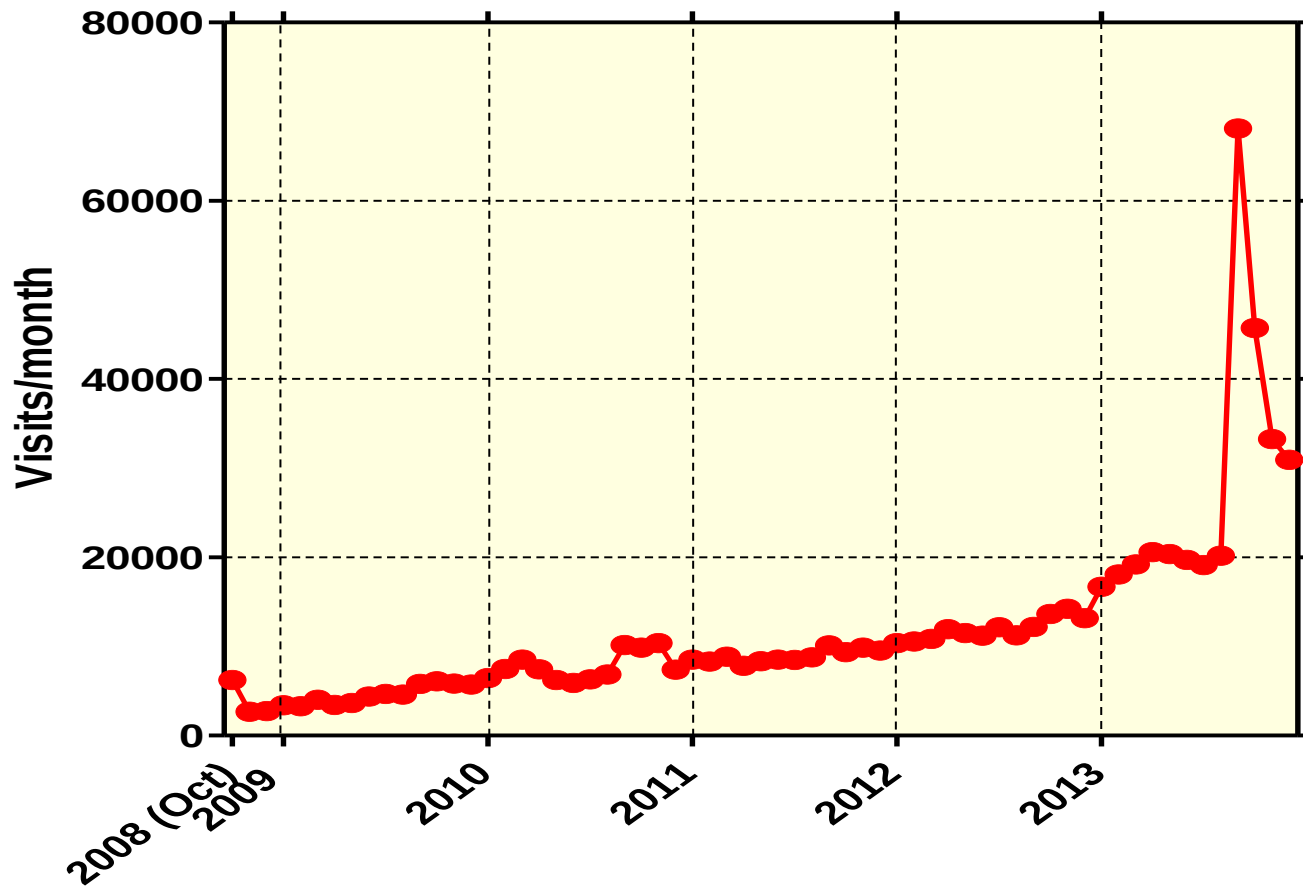
Peter C. Doherty, BVSc, MVSc, PhD - Nobel Laureate Professor Department of Microbiology and Immunology University of Melbourne, Australia, faculty member University of Tennessee Health Science Center through the College of Medicine and conducts research at St. Jude Children's Research Hospital, Memphis, Tennessee (USA)

Bernadette Dunham, DVM, PhD - Director, Center for Veterinary Medicine, U.S. Food and Drug Administration, Rockville, MD (USA)

...Plus 26 others



Number of Visits per Month



One Health News

- ▶ Most popular page on website
- ▶ Updated 1 – 3 times weekly
- ▶ Submissions received globally and posted



One Health

Public health

Environmental chemistry

Veterinary medicine

Human medicine

Molecular and microbiology

Ecology

Health economics

Individual health

Population health

Ecosystem health

Bacterial infections

Viral infections

Vector-borne infections

Parasite infections

Antimicrobial resistance

Bio threats

Zoonotic infections

Food safety

Global health

Intervention

Vaccines and therapeutics

Vector control

Sanitation

Surveillance

Comparative medicine / Translational Medicine

Metabolic disorders in humans and animals

Joint and skeletal diseases in humans and animals

Cancer and cardiovascular disease in humans and animals

Human-animal bond

Environmental hazards exposure to humans and animals



ONE HEALTH SWEDEN

HUMANS | ANIMALS | ENVIRONMENT

In collaboration with One Health Initiative Autonomous pro bono team

Future Goals

- ▶ One Health Online Courses
- ▶ One Health Videos
- ▶ One Health Webinars



The Hippocratic Oath

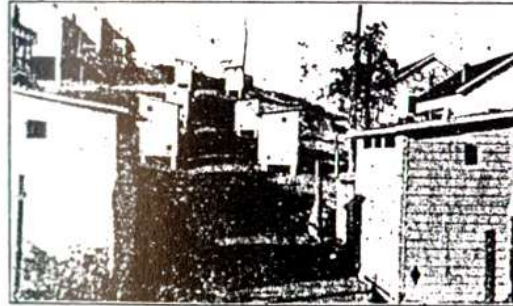
I swear by Apollo Physician and Asclepius and Hygeia and Panacea and all the gods and goddesses, making them my witness, that I will fulfill according to my ability and judgment this oath and this covenant



Hygeia

(To Be Tacked Inside of the Privy and NOT Torn Down.)

Sanitary Privies Are Cheaper Than Coffins



For Health's Sake let's keep this Privy CLEAN. Bad privies (and no privies at all) are our greatest cause of Disease. Clean people or families will help us keep this place clean. It should be kept as clean as the house because it spreads more diseases.

*The User Must Keep
It Clean Inside. Wash
the Seat Occasionally*

How to Keep a Safe Privy:

- 1. Have the back perfectly screened against flies and animals.*
 - 2. Have a hinged door over the seat and keep it CLOSED when not in use.*
 - 3. Have a bucket beneath to catch the Excreta.*
 - 4. VENTILATE THE VAULT.*
 - 5. See that the privy is kept clean inside and out, or take the blame on yourself if some member of your family dies of Typhoid Fever.*
-

Some of the Diseases Spread by Filthy Privies:

Typhoid Fever, Bowel Troubles of Children, Dysenteries, Hookworms, Cholera, some Tuberculosis.

The Flies that You See in the Privy Will Soon Be in the Dining Room.

Walker County Board of Health

The Veterinary Oath

I solemnly swear to use my scientific knowledge and skills for the benefit of society through the protection of animal health, the relief of animal suffering, the conservation of animal resources, **the promotion of public health**, and the advancement of medical knowledge.



Environmental Health

1. Food and Water Safety
2. Zoonoses and Vectorborne Disease

Prevention and Control

3. Safe and Healthy Places

Infectious agents, toxicants, excess radiation... -all hazards



Environmental Health

1. Food and Water Safety

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***Infectious agents, toxicants,
excess radiation...***



Food Safety

Ensuring that food is
free of harmful agents:

pathogens, toxic chemicals,
foreign objects, excess
radiation





FSMA Framework for Food Safety



Human Food



Produce Safety



Imports

- Foreign Supplier Verification
- Accredited Third Party Certification



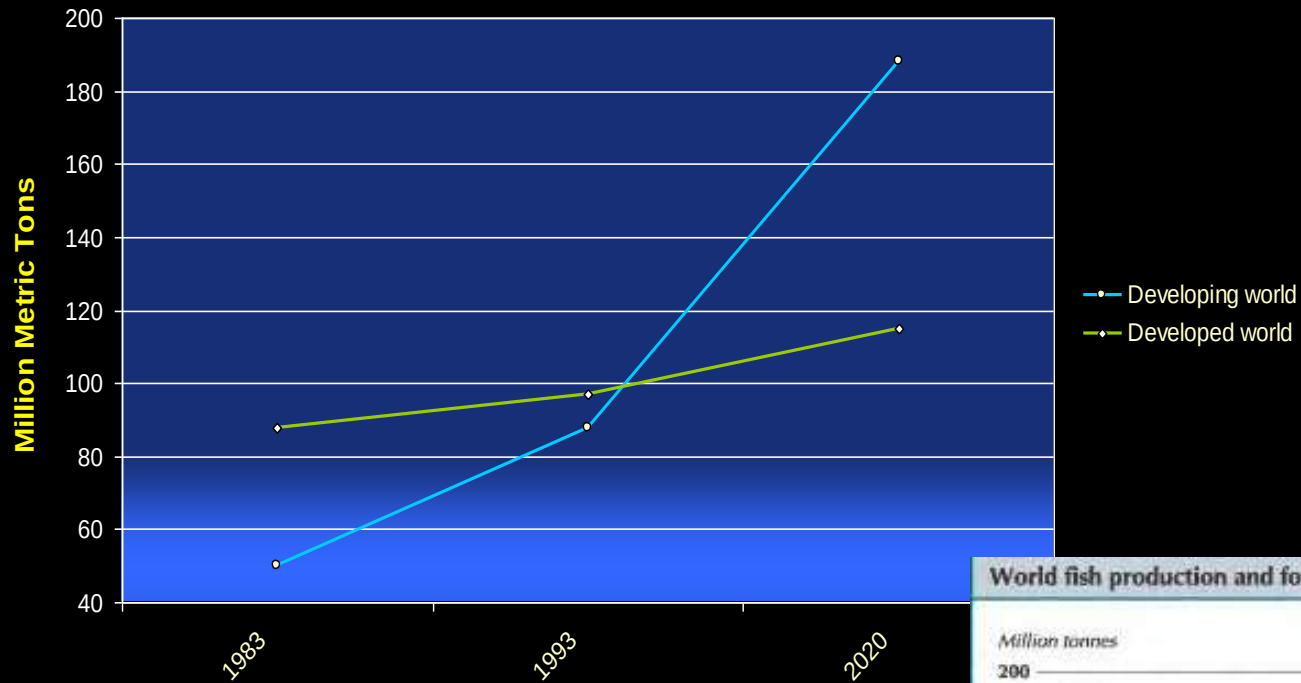
Animal Food



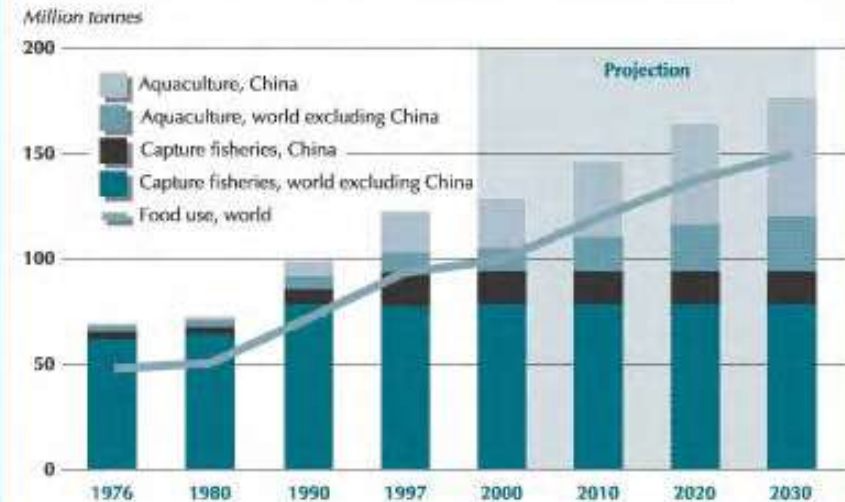
YOU TRY SOME
FIRST!...



World Animal Protein Consumption



World fish production and food use consumption 1976–2030

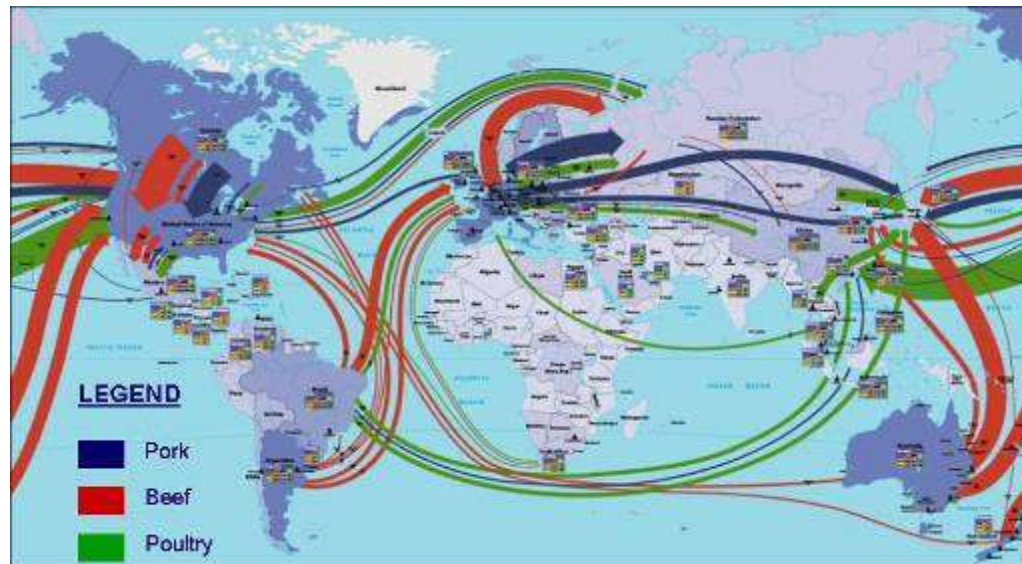


Source: IFPRI, "Livestock to 2020."

FAO Annual Data. Total meat consumption for 1983 and 1993 are 5-year moving averages. 2020 projections come from IFPRI's global model, IMPACT

An Economic Perspective

- Projected livestock needs create new ecosystem stresses
- Highly interconnected systems are vulnerable to epidemics
- Policy responses must take the long view



Food Safety and Emerging Diseases





Food Safety



Drinking Water – Applied Research



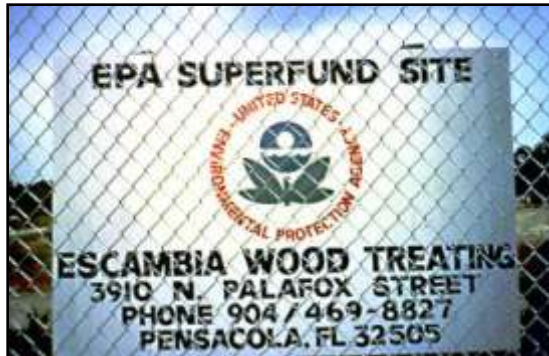
Pesticides/Fertilizers



Cattle Dipping Vats



CAFOs



Hazardous Waste
Sites



Landfills



Miscellaneous Spills



XI International Conference on AIDS Vancouver, Canada



Environmental Health

1. Food and Water Safety

2. Zoonoses and Vectorborne Disease

Prevention and Control

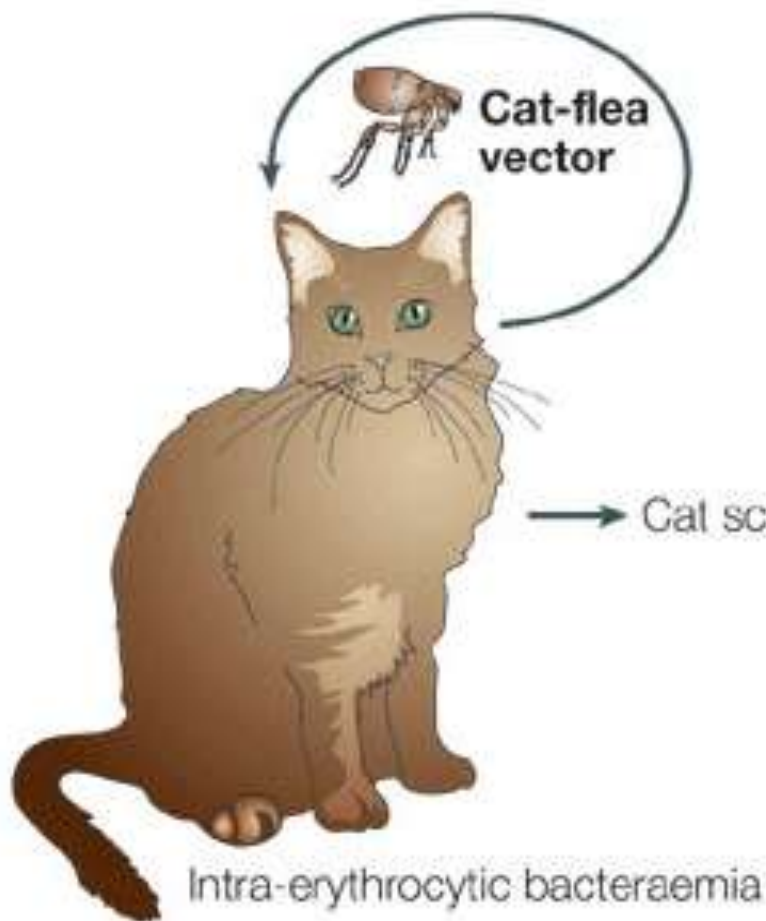
3. Safe and Healthy Places

***Infectious agents, toxicants,
excess radiation...***





Feline reservoir host



Rheumatoid arthritis



Human incidental host



Cat-scratch disease in immunocompetent person



Bacillary angiomatosis in immunocompromised person



Environmental Health

1. Food and Water Safety
2. Zoonoses and Vectorborne Disease
Prevention and Control

3. Safe and Healthy Places

***Infectious agents, toxicants,
excess radiation...***



One Health Approach to “Emerging” Environmental Health Issues

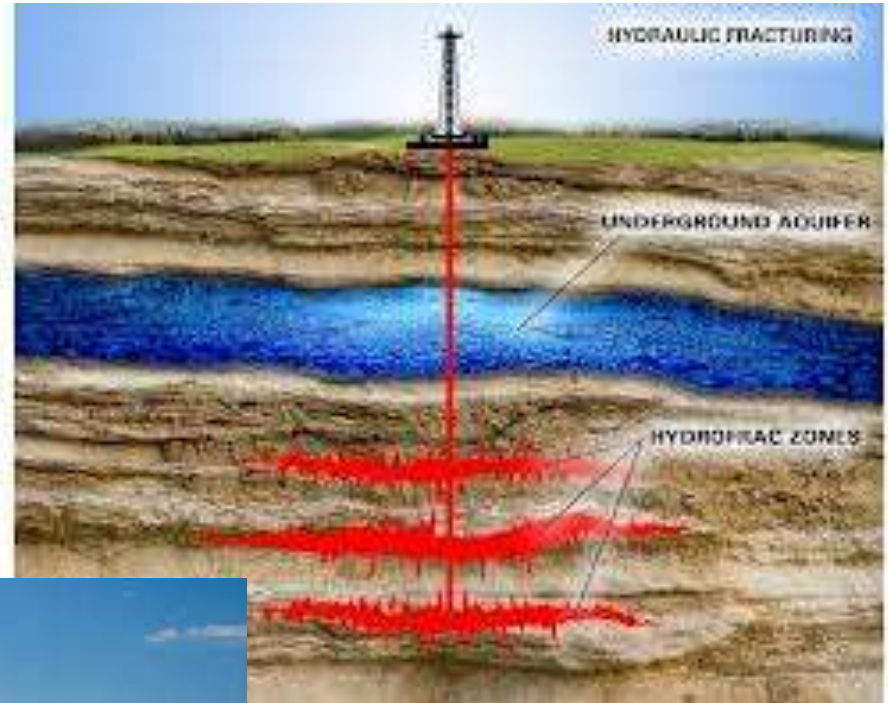
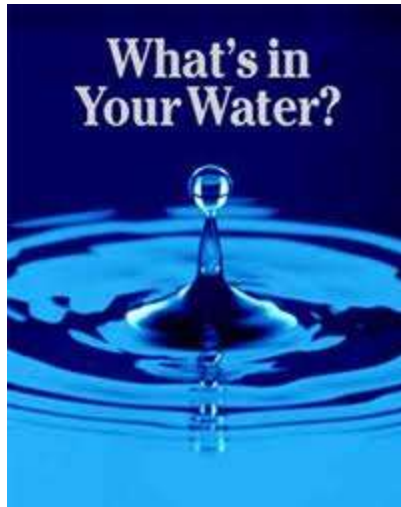


PHOTO: HEATH ANTHONY/GETTY IMAGES





Environmental Sampling/Biomonitoring



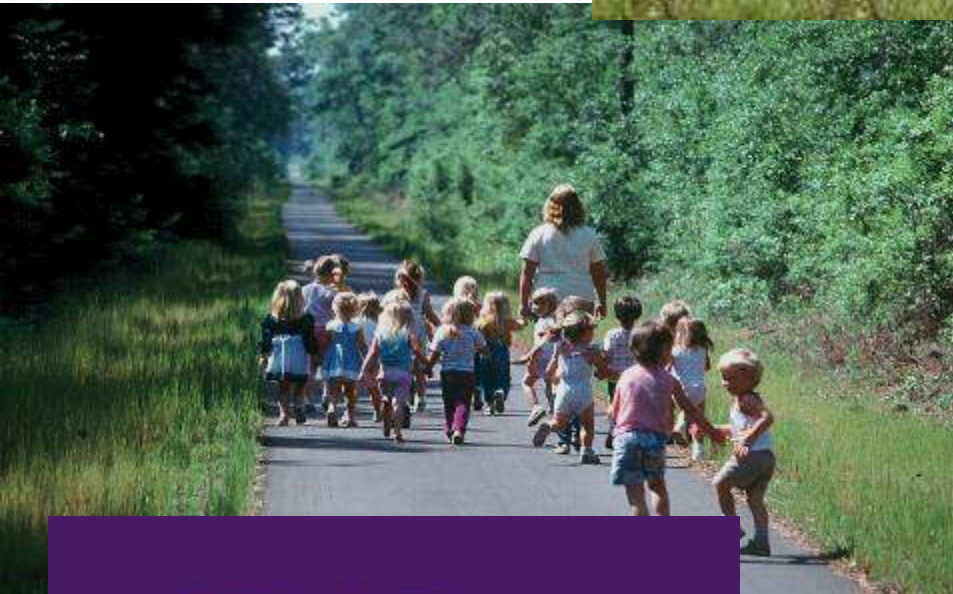
Threats Due to Poor Design



Environmental Risks are Responsible for Most Chronic Diseases

- ▶ Heart disease
- ▶ Diabetes
- ▶ Cancer
- ▶ Obesity





**Building Resilient
Communities**



Florida
Environmental
Health Tracking
Program



Pets for Life

Shared Exposures to Indoor Environments



Global Health



www.theodora.com

Streymoy
Fu
Vestman
Mykines
Vágar
-62°00'

F A R O E I S L A N D S

**NORTH
ATLANTIC
OCEAN**

-61°30'

0 10 20 km
0 10 20 mi

Skúvoy
Sandoy
Stóra Dímun
Suðuroyarfjørður
Tvorøyrri
Suðuroy

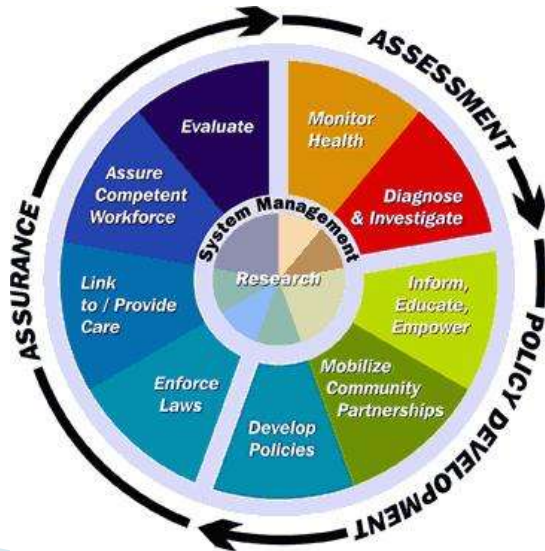


theCHIVE.com



One Health Research

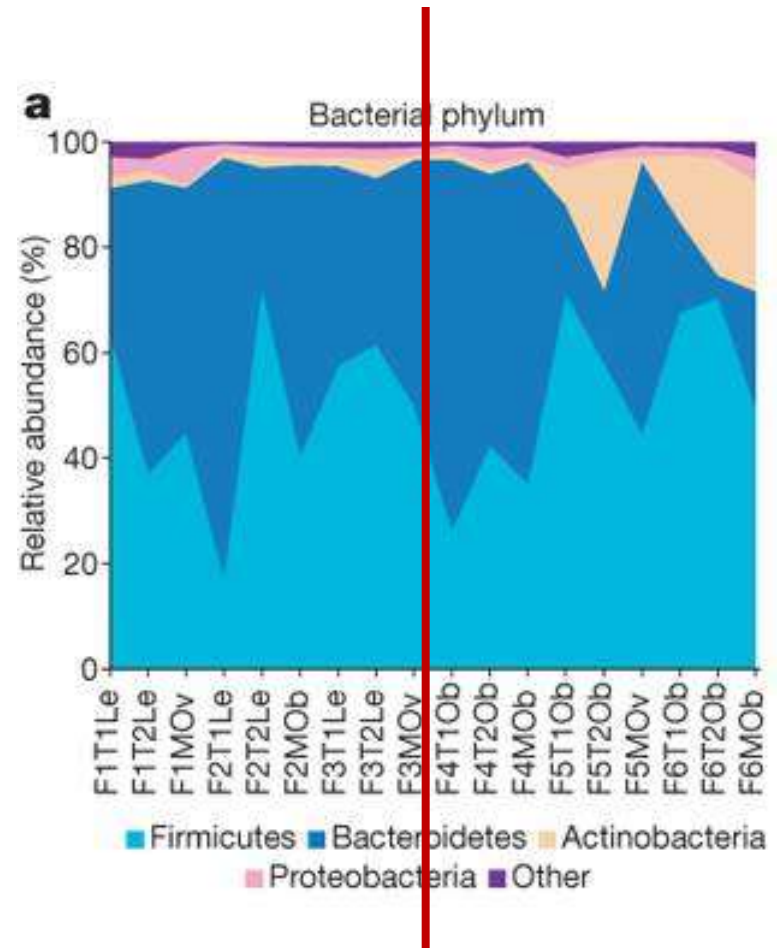
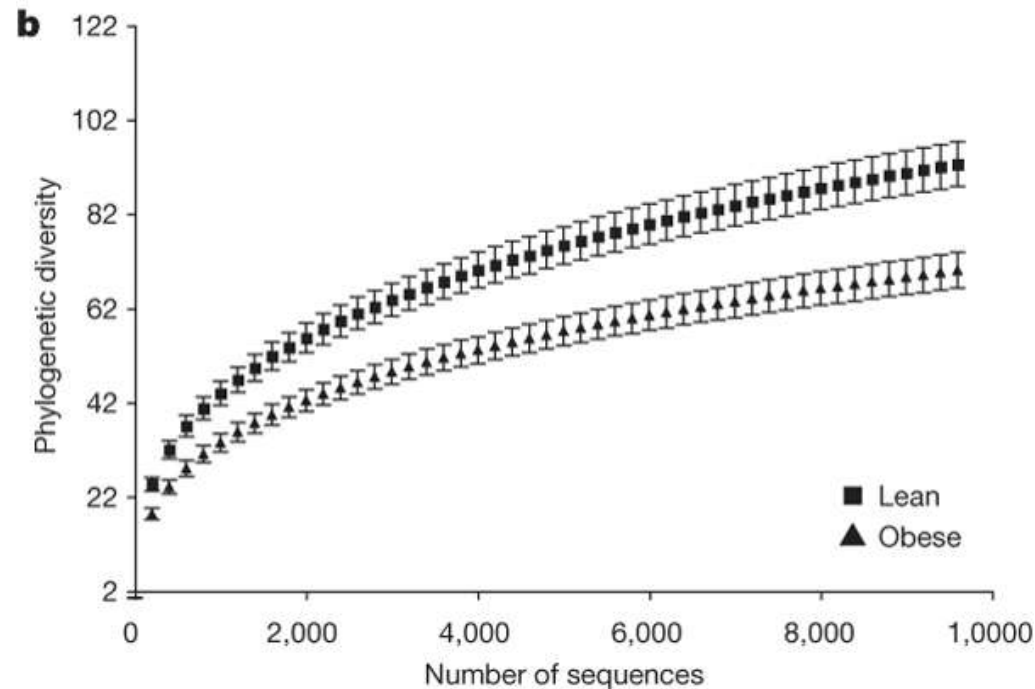
- ▶ Identify shared exposure risks
 - Identify animal sources of human illness rapidly and visa versa
- ▶ Implement system controls
- ▶ Educate the public and the health community shared diseases and how to prevent them



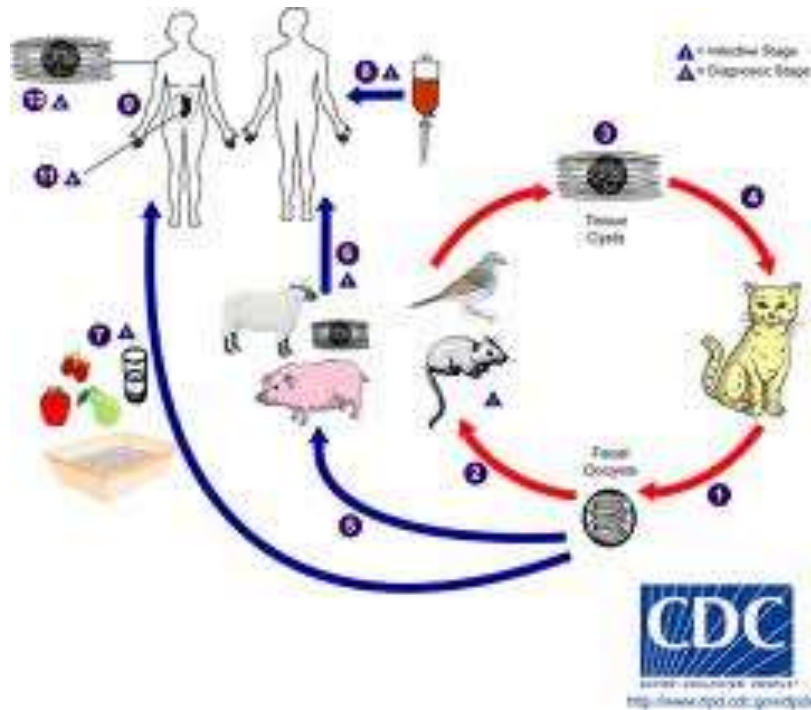
Microbiome: Our “11th organ system”



Microbiome and disease: Differences in gut microbiota in lean vs. obese individuals

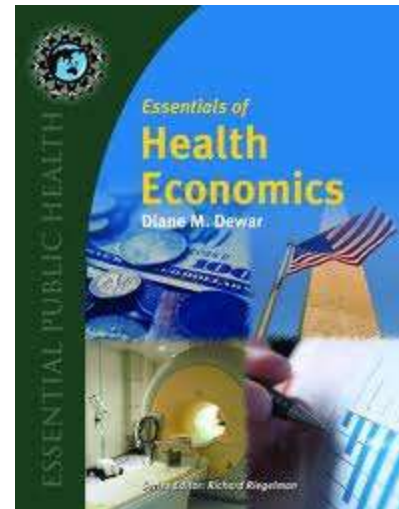


Toxoplasma



One Health in all Policies

*linkages between policies and interventions,
health determinants and the resulting health outcomes*



Opportunities for One Health



**Emerging
Diseases**



**Bio- Agro-
Terrorism**



**Emergency
Response**



**Biomedical
Research**



**Food Security
Nutrition
Foodborne
Disease**



**Antibiotic
Resistance**



Disability



Mental Health



**Environmental
Health**



Injuries



**Occupational
Health**

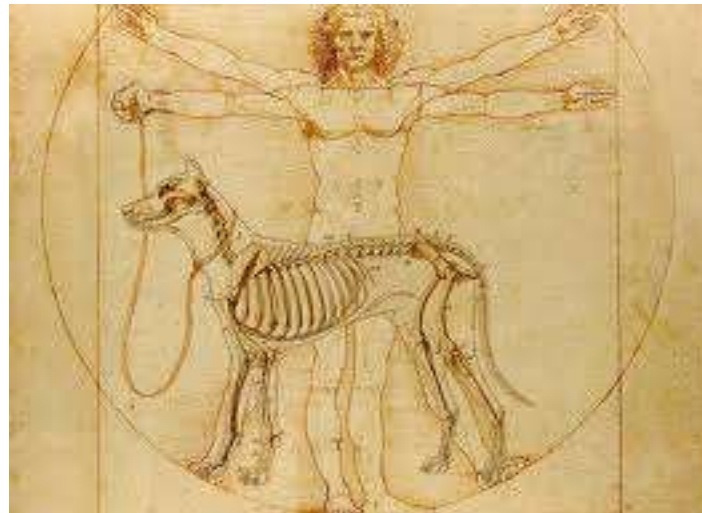


**Health
Education**



**Obesity
Physical Activity**





Thank you!

<http://www.onehealthinitiative.com/>