Call to Action: Developing OH Food Systems Transdisciplinary Practitioners

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Today’s Food Journey

- Complexity & challenges of sustainable food systems
- Growing need for OH approaches applied to food
- Why we need to develop OH transdisciplinary practitioners
- Barriers to implementing the OH approach
- Tools for academia and organizations
Emergence of Convergence

- Genetic and Biological Factors
- Physical and Environmental Factors
- Ecosystems
- Unsustainable Food Systems
- Animals
- Humans
- Social, Political, and Economic Factors
- Ecological Factors

(Adapted from L. King)
Changing climates impact disease vectors & their hosts
Greater impact on poor socio-economic populations

Water wars emerge
EXAMPLE: developing an E. coli O157:H7 vaccine.

Ingestion of E. coli O157

Fecal, Salivary shedding

National International Transport

Complements of Dr. John Fairbrother
How can we build capacity to better solve food systems’ challenges?
First, we must consider the **deep-seated root causes of ill health and inequities:**

- Social-cultural
- Psychological
- Gender
- Economic

**Health Policies:** Human, Animal, Ecosystems

Requires a **socio-economic, preventive One Health** approach.
One Health Approach

Adapted from 2009 Rock, Buntain, Hatfield, Hallgrimsson
One Health Transdisciplinary Approach: Collaborative & Interconnected

Conceptual Framework

Interdisciplinary

Multidisciplinary

Inter-sectorial blending

Adapted from Craig Stephen; Lisa Allen
Applying the One Health Approach: Transdisciplinary Participatory Research

Slide from J. Zinsstag
Dramatic Shift Needed in Academia

Encourage, support, create opportunities for TD to complement traditional disciplinary research approaches

Focus on prevention & root causes of unsustainable food systems
Researchers and practitioners trained in participatory and interactive processes linking natural and social sciences often form the backbone of long-term collaborative networks.

Transdisciplinary practitioners are as valuable to the project as other disciplinarians, and they need to be involved from the beginning of a project.

Research-led universities especially can create enabling environments
Transdisciplinary One Health Practitioner Emerging Career

Medical Sciences

Political Science

Communities

Humanities

STEM

Ecosystem Sciences

Emerging career profile

Adapted from J. Zinsstag
NNA Key Components

National Science Foundation Call for Proposals 2019: Navigating the New Arctic

Innovate for Arctic Observing

Advance Research and Modeling

Co- Produce Knowledge

Build and Enable Partnerships

Advance STEM Education and Workforce

OH Transdisciplinary Approach/Leadership
Barriers to One Health
7 BARRIERS to One Health Practice

- Long term relationship-building versus demands for quick results
- Disciplinary language and cultural differences
- Institutional “silos” lack interdisciplinary staff & shared reporting systems
- Budgetary constraints & unequal allocations
- Perceived power differentials among disciplines & programs
- Rewards lacking
- Lack of expertise in transdisciplinarity
Call to Action: Building OH TD Capacity

- Performance Rewards
- Collaboration Co-location
- Enabling Environment
- TD Curriculum
- Mentorship
- Team Funding

Buntain, L. Allen, et al, *Enabling Academic One Health Environments*
Call to Action: Building OH TD Capacity- cont’d

- Creating a culture of integrative research
- Co-location and clustering of disciplines
- Create a OH overarching institutional mandate
- Strategically plan joint appointments
- Seed team grant funding
- Internal food systems administrative support
- Modify institutional reward system
- Create unique student career trajectories with community experience
Example: One Health TD Food Systems Practitioner Competencies

- Cross-sectorial problem solving abilities
- Critical thinking and objectivity; preventive focus
- Leadership, excellent written and oral communication, negotiation skills
- Knowledge of various food sectors’ businesses, production challenges and consumer behavioral science
- Root cause analyses: consumers/communities
- Food system sciences, policies, regulations
- Discipline expertise
- Having certification in multiple food businesses (NZ)
One Health approach across food systems
## Competency Based Food System Curriculum

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<th>Leadership</th>
<th>Leadership Development – Employee to Senior Executive</th>
<th>Talent Management</th>
<th>Emerging Issues</th>
<th>Public Health</th>
<th>Societal &amp; Gov’t Values &amp; Ethics</th>
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<td>Foundation Food</td>
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**One Health Courses**
Examples: Integrating OH Approach into Professional Career Development

- OH research groups, seminar series & workshops
- Develop international, cross-sectorial networks
- Publish OH approach in TD & disciplinary journals
- Subscribe to OH networks (e.g., OH Commission)
- Attend & present posters at TD conferences (Ecohealth, Int’l OH Congress, etc.)
Out Now From CABI Publishers

A practical book that examines the origins of One Health and describes how to put policy into practice.

Part 1: Theoretical Foundations

Part 2: Methods for the Assessment of the Animal-Human Linkages

Part 3: Case Studies from Research to Policy and Practice

Part 4: Capacity Building, Public Engagement and Conceptual Outlook

84 Worldwide Contributors
Today’s Food Journey

- Complexity & challenges of sustainable food systems requires an inter-sectorial, ID preventive approach
- Urgency to develop a cadre of OH transdisciplinary practitioners to lead, facilitate inter-sectorial teams
- Barriers include “doing business as usual”
- Tools include developing innovative career path models and organizational mandate
What’s in our future?
THANK YOU!!

SONORAN DESERT SUNSET
TUCSON ARIZONA
What is the OH Approach?

- It necessitates coordinated, collaborative, multidisciplinary and cross-sectoral transdisciplinary research at the animal-human-ecosystems interface.

- It includes the broader ecosystem, as well as economic and social dynamics that impact human, animal, and environmental health.

www.onehealthglobal.net/what-is-one-health
Example of a transboundary, intersectoral research project event timeline