



Welcome to the

# AHVMA

## 2016 ANNUAL CONFERENCE

SEPTEMBER 10-13, 2016 COLUMBUS, OHIO

At this national conference, Dr. Waters presented an inspirational series of 5 lectures prepared for practicing veterinarians to provoke fresh thinking about the science behind healthy aging and the process of scientific discovery.

Dr. Waters was honored by an invitation to deliver the conference's keynote address titled "Envisioning the Future of Medicine: Get the Words Out of Your Eyes", in which he illustrated how the methods we use in scientific discovery and science education could be enhanced significantly by cultivating an attitude of language precision.

AMERICAN HOLISTIC VETERINARY MEDICAL ASSOCIATION

THE LEADER • THE VOICE • THE RESOURCE

### KEYNOTE SPEAKER



DAVID J. WATERS, DVM, PhD

Dr. David Waters is the Director of the Center for Exceptional Longevity Studies at the Gerald P. Murphy Cancer Foundation in West Lafayette, Indiana.

Since 2008, he has led the research team conducting the first systematic study of exceptional longevity in pet dogs. The research hinges on the idea that pet dogs with extreme longevity — equivalent to human who live to be 100 years old — offer a valuable scientific opportunity to uncover important clues to understanding what it takes for pets and people to age more successfully and avoid cancer.

From 2000 to 2014, Dr. Waters served as Professor of Comparative Oncology in the School of Veterinary Medicine and Associate Director of the Center on Aging and the Life Course at Purdue University. He received his PhD from the University of Minnesota.

Dr. Waters is nationally recognized for his work on validating pet dogs as models of human aging and cancer. In 2006, he published in *Scientific American* "Cancer Clues from Pet Dogs", which benchmarked for investigators and the public the science behind the field of comparative oncology.

In 2010, Dr. Waters' first cross-country scientific expedition to study the oldest-living Rottweilers in their homes ("The Old Grey Muzzle Tour") was featured in *USA Today* and *Good Morning America*. His 2013 TEDx talk "The Oldest Dogs as Our Greatest Teachers: Get the Words Out of Your Eyes" highlights the innovation of studying the oldest-old pet dogs and underscores how our use of language not only limits scientific discovery but also how we respond to new information.

KEYNOTE | David Waters, DVM, PhD

Envisioning the Future of Medicine: Get the Words Out of Your Eyes – Union Ballroom

Home of "The Old Grey Muzzle Tour"

from the Center for Exceptional Longevity Studies, Gerald P. Murphy Cancer Foundation,  
West Lafayette, Indiana [www.gpmcf.org](http://www.gpmcf.org)

# THE BIOLOGY OF AGING: YOU CAN'T THINK CRITICALLY ABOUT NOTHING

David J. Waters, DVM, PhD

**Objectives:** To understand critical issues in the biology of aging, and how these concepts impact the goal of extending healthy longevity in pets and people

**Summary:** It is an unfortunate fact that no veterinarian receives training in the biology of aging as part of their DVM curriculum. As a result, the profession is ill-equipped to constructively debate the pros and cons of new advances in anti-aging medicine. This lecture will provide an informative overview of critical issues in the biology of aging that are expected to impact the goal of extending the healthy longevity of pets and people during the next decade.

## References

1. Waters DJ. Longevity in pet dogs: Understanding what's missing. *Vet J* 2014; 200: 3-5.
2. Waters DJ, Kariuki NM. The Biology of Successful Aging: Watchful Progress at Biogerontology's Known-Unknown Interface. *Gerontology: Perspectives and Issues*. Ed. Wilmoth and Ferraro, New York: Springer Publishing Co., 2013.
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4. Ristow M, et al. Antioxidants prevent health-promoting effects of physical exercise in humans. *Proc Natl Acad Sci* 2009; 106: 8665-70.
5. Kirkwood TB. Understanding the odd science of aging. *Cell* 2005; 120: 437-447.

*Lecture Two*

# SUCCESSFUL AGING: THE CHALLENGE OF PROMOTING HEALTH IN A U-SHAPED WORLD

David J. Waters, DVM, PhD

**Objectives:** To understand that the deep-rooted metaphor “more is better” is a significant obstacle to finding and to communicating those interventions that really can promote successful aging

**Summary:** The perception that is pervasive among the public is that, when it comes to using “good things” like dietary supplements, more is better. However, a growing body of scientific evidence suggests that this is just not how biology works — the world is U-shaped. This lecture will expose the deep-rooted metaphor “more is better” as a significant obstacle to communicating the interventions that really can promote health. If our goal is successful aging, then we must learn to think U-shaped.

## References

1. Chiang EC, et al. Defining the optimal selenium dose for prostate cancer risk reduction: Insights from the U-shaped relationship between selenium status, DNA damage, and apoptosis. *Dose Response* 2010; 8: 285-300.
2. Waters DJ, Chiang EC. It’s a U-shaped world: a Batesonian prescription for promoting public health. *Et Cetera* 2010; 67: 218-226.
3. Wong, et al. Is exercise protective against influenza-associated mortality? *PLoS One* 2008; 3: 1-6.
4. Wang X, et al. Dietary calcium intake and mortality risk from cardiovascular disease and all causes: A meta-analysis of prospective cohort studies. *BMC Medicine* 2014; 12: 158-168.
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Lecture Three

## BEYOND REPRODUCTION: RE-CONCEPTUALIZING OVARIES AND HEALTHY LONGEVITY

David J. Waters, DVM, PhD

**Objectives:** To understand the association between timing of spaying and healthy longevity in pet dogs and to examine evidence that supports a new line of thinking: Ovaries are part of a system that promotes longevity

**Summary:** Conventional wisdom says spaying (ovariohysterectomy) promotes health. However, recent evidence from 3 different species — dog, human, mouse — points to a potentially contradictory conclusion: Ovaries are part of a system that promotes healthy longevity. This lecture will take a look at this experimental evidence, encouraging a systems thinking approach that lends fresh perspective to the timing-of-spaying debate.

### References

1. Waters DJ, et al. Exploring mechanisms of sex differences in longevity: lifetime ovary exposure and exceptional longevity in dogs. *Aging Cell* 2009; 8: 752-755.
2. Waters DJ, et al. Probing the perils of dichotomous binning: how categorizing female dogs as spayed or intact can misinform our assumptions about the lifelong health consequences of ovariohysterectomy. *Theriogenology* 2011; 76: 1496-1500.
3. Waters DJ. In search of a strategic disturbance: some thoughts on the timing of spaying. *Clin Theriogenol* 2011; 3: 433-437.
4. Kengeri SS, et al. Exceptional longevity in female Rottweiler dogs is not encumbered by investment in reproduction. *AGE* 2013; 35: 2503-2513.
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*Lecture Four*

# THE AGING-CANCER CONNECTION: IMPLICATIONS FOR CANCER PREVENTION

David J. Waters, DVM, PhD

**Objectives:** To understand the relationship between aging and cancer incidence and cancer aggressiveness, and to examine the cancer resistance observed among the oldest-old

**Summary:** The aging-cancer intersection is surprisingly underexplored territory — few aging researchers know much about cancer, few cancer researchers know much about aging. This lecture will explore the relationship between: aging and the risk for cancer development; aging and the clinical aggressiveness of resultant cancers. Moreover, the observation that the oldest-old are *resistant* to cancer — a paradox shared by both dogs and humans — creates a unique opportunity to better understand the factors that favor cancer resistance. This lecture will emphasize how realizing progress in the aging-cancer intersection will be a key to developing smarter strategies for achieving a reduction in cancer mortality.

## References

1. Cooley DM, et al. Exceptional longevity in pet dogs is accompanied by cancer resistance and delayed onset of major diseases. *J Gerontol Biol Sci* 2003; 58: B1078-1084.
2. Waters DJ, Kariuki N. The Biology of Successful Aging: Watchful Progress at Biogerontology's Known-Unknown Interface. In: *Gerontology: Perspectives and Issues*; Ed. Wilmoth and Ferraro, New York: Springer Publishing Co., 2013.
3. Waters DJ. Aging Research 2011: Exploring the pet dog paradigm. *The ILAR Journal* 2011; 52(1): 97-105.
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*Lecture Five*

# CELEBRATING YOUR UNFINISHEDNESS: A PERSPECTIVE ON PERSONAL PERFORMANCE AND THE AIMS OF EDUCATION

David J. Waters, DVM, PhD

**Objectives:** To understand key attitudes underemphasized in veterinary training that promote self-renewal and peak personal performance, and how developing dialogic self-awareness can raise the quality of our thinking, making us better equipped as discoverers and educators

**Summary:** Creative excellence in discovery, education, and communication demands stamina and openmindedness. Stamina requires renewal, yet few opportunities for self-renewal are built into most workplaces. And as experts, our openmindedness is often stifled by our own sense of finishedness. This lecture will lay out a strategy for sustained renewal and creative excellence: Each person assembling a gallery of hand-picked intellectual heroes to serve as their life-long teachers. It will argue that tethering oneself to intellectual heroes does not limit one's creative potential but instead achieves exactly the opposite effect — enabling one to see and reach their own greatest potential. By strengthening the habit of strategic tethering, we situate an active, partially guided search for self-renewal and a heightened receptivity to new ideas at the very core of achieving excellence in the research-education space. The lecture will provide fresh insights into the skills and attitudes of peak performance that can make us better educators — educating our clients, our colleagues, ourselves.

## References

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3. Palmer PJ. *The Courage to Teach*. San Francisco: Jossey-Bass, 2007.
4. Zander RS, Zander B. *The Art of Possibility*. New York: Penguin Books, 2002.
5. Whitehead AN. *Modes of Thought*. New York: The Free Press, 1968.
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