

Curriculum Vitae
Ramiro Isaza, DVM, MS, MPH, DACZM
(Updated October 29, 2013)

PRESENT POSITION: Associate Professor of Zoological Medicine
(Graduate Faculty Member)

CONTACT INFORMATION:

ACADEMIC ADDRESS Department of Small Animal Clinical Sciences
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EDUCATION:

MPH	2011	College of Public Health and Health Professions University of Florida Gainesville, Florida
MS	1993	College of Veterinary Medicine University of Florida Gainesville, Florida
DVM	1988	New York State College of Veterinary Medicine Cornell University Ithaca, New York
BS	1983	Zoology, with High Honors University of Florida Gainesville, Florida
AA/AS	1979	Zoo Keeper Training Program Santa Fe Community College Gainesville, Florida

POST-GRADUATE TRAINING IN ZOOLOGICAL MEDICINE:

Residency	1992	Wildlife and Zoological Medicine College of Veterinary Medicine University of Florida Gainesville, Florida
Internship	1990	Zoological Medicine Riverbanks Zoological Park Columbia, SC

BOARD CERTIFICATION:

Diplomate (#40 / 127) 1996 American College of Zoological Medicine

VETERINARY LICENSURES: Florida, California

APPOINTMENTS AND PROFESSIONAL EXPERIENCE:

2007-present	<p>Associate Professor Zoological Medicine Service Department of Small Animal Clinical Sciences College of Veterinary Medicine, University of Florida Gainesville, Florida</p>
2003-2007	<p>Assistant Professor Zoological Medicine Service Department of Small Animal Clinical Sciences College of Veterinary Medicine, University of Florida Gainesville, Florida</p>
1998-2003	<p>Assistant Professor Exotic Animal, Wildlife, and Zoo Animal Medicine Service Department of Clinical Sciences College of Veterinary Medicine, Kansas State University Manhattan, Kansas</p>
1994-1998	<p>Staff Veterinarian Los Angeles Zoo Los Angeles, California</p>
1993-1994	<p>Clinical Instructor Wildlife and Zoological Medicine Service College of Veterinary Medicine, University of Florida Gainesville, Florida</p>
1992-1993	<p>Clinical Instructor/Graduate Student Wildlife and Zoological Medicine Service College of Veterinary Medicine, University of Florida Gainesville, Florida</p>
1990-1992	<p>Resident Veterinarian Wildlife and Zoological Medicine Service College of Veterinary Medicine, University of Florida Gainesville, Florida</p>
1989-1990	<p>Intern Veterinarian Riverbanks Zoological Park Columbia, South Carolina</p>
1988-1989	<p>Associate Veterinarian Englewood Animal Hospital Englewood, New Jersey</p>

HONORS AND AWARDS:

- 1996 American College of Zoological Medicine, Student Manuscript Award
- 1988 Society of Phi Zeta, Veterinary Medicine Honor Society
- 1988 Association of Avian Veterinarians, Student Scholarship
- 1983 Deans list, University of Florida

CURRENT UNIVERSITY TEACHING:

- 1. **Courses** (taught annually)
 - A. Exotic Animal Medicine Clinical Rotation (VEM 5721/5821)
Senior veterinary students in 2 week block rotations
 - B. Clinical Medicine and Surgery of Rabbits, Rodents, and Ferrets (VEM 5364)
Course Coordinator (2006, 07, 08, 09, 10, 11, 12), Credit (1), Lectures (16 hrs)
 - C. Reptile Medicine and Surgery (VEM 5370), Lectures (1 hr)
 - D. Avian Medicine and Surgery (VEM 5311), Course Coordinator 2008 (12 hrs), Other years - lecture (4 hrs)
 - E. Contemporary Topics in Animal Welfare and Ethics (VEM 5041), Lecture (1 hr)
 - F. End of Life Issues (VEM 5003), Lecture (1 hr)
 - G. An Introduction to Entomology, Zoonotic Diseases and Food Safety (PHC 6515), Lecture (1 hr)
 - H. Large Animal Anatomy Section of Animal Systems III (VEM 5112M), Avian Anatomy, Laboratory (2 hrs)
 - I. HHMI Science for Life Seminar (IDH 3931), Lecture (.25 hr)

PREVIOUS UNIVERSITY TEACHING:

- 1. **University of Florida**
 - A. Marine and Large Animal Medicine (VEM 5377)
Course Coordinator 2007, Credit (1), Lectures (10 hrs)
 - B. Small Animal Anesthesiology Elective (VEM 5472), Lecture (1 hr)
 - C. Emerging Diseases, Foreign Animal Diseases, and Bioterrorism (VEM 5571),
Lecture (2 hrs)
 - D. Advanced Fish Medicine, Marine Mammal Clinical Techniques, Laboratory (2.5 hrs)
 - E. Care of Aquatic Megavertebrates - SeaVet 1 (VEM 6008), Lecture (1hr)

- 2. **Kansas State University**
 - A. Companion Bird and Exotic Animal Medicine (CS 737), Lectures (16 hrs)
 - B. Exotic Animal Medicine Clinical Rotation (CS 822)
Senior veterinary students in 3 week block rotations
 - C. Sophomore Clinical Skills - Laboratory course (CS 703), Laboratory (3 hrs)
 - D. Laboratory Animal Science (DMP 759), Lectures (2 hrs)
 - E. Gross Anatomy II (AP 705), Lecture (1 hr)
 - F. Clinical Toxicology (DMP 801), Lecture (1 hr)
 - G. Theriogenology (CS 728), Lectures (2hrs)
 - H. Medicine and Surgery of South American Camelids (CS 821), Lecture (1 hr)
 - I. Anatomical techniques - Graduate course in neuroscience methods (AP 850)
Lecture and laboratory (4 hrs)
 - J. Exotic Animal Medicine Elective Course
Presented at the College of Veterinary Medicine, Iowa State University.
Lectures (9 hrs)

- 3. **St. George's University**
 - A. Introduction to Zoological Medicine (VMED 612), Visiting Professor, Lectures (15 hrs)

TEACHING INNOVATIONS:

- A. Developed a teaching schedule for the clinical rotation (VEM 5721/5821).
- B. Developed interactive, problem based avian clinical teaching modules using interactive software (VEM 5721/5821).
- C. Developed group discussions for the exotic animal medicine clinical rotation (VEM 5721/5821).
Topics:
 - Interpretation of Reptile and Avian Radiographs
 - Interpretation of Exotic Animal Clinical Chemistries
 - Darting Equipment and Techniques
 - Husbandry of Common Exotic Pets
- D. Developed and managed the senior student clinical externship at the Los Angeles Zoo. The externship provided a unique opportunity for students to experience veterinary practice in a large zoological facility.
- E. Prepared a reading list for the exotic animal clinical rotation at the University of Florida.

INTERN AND RESIDENT SUPERVISION:

2012-present	Dr. Daniel Fredholm	
2011-present	Dr. Jessica Emerson	
2010-present	Dr. Paige Brock	
2009-present	Dr. Natalie Hall, Resident	Diplomate ACZM
2008-2011	Dr. Copper Aitkin-Palmer, Resident	
2007-2010	Dr. Rolando Quesada, Resident	
2006-2009	Dr. Debbie Myers, Resident	Diplomate ACZM
2005-2008	Dr. Adrienne Atkins, Resident	
2004-2007	Dr. Jessica Siegal-Willott, Resident	Diplomate ACZM
2003-2006	Dr. Christine Fiorello, Resident	Diplomate ACZM
2003-2005	Dr. James Wellehan, Resident	Diplomate ACZM
2003-2004	Dr. Maud Lafortune, Resident	Diplomate ACZM
2001-2003	Dr. Adrian Mutlow, Resident	
2002-2003	Dr. Jennifer D'Agostino, Intern	Diplomate ACZM
2001-2002	Dr. Nancy Boedeker, Intern	
2000-2001	Dr. Rob Coke, Intern	Diplomate ACZM
1999-2000	Dr. Gregory Fleming, Intern	Diplomate ACZM
1999-2000	Dr. Peter Helmer, Intern	Boarded ABVP -Avian
1999-2000	Dr. Tama Cathers, Intern	
1998-1999	Dr. Cornelia Ketz-Riley, Intern	Diplomate ACZM

PROFESSIONAL STUDENT SUPERVISION (FACULTY ADVISOR):

UF Class	
2013	Carla Bernal
2013	Jocelyn Lyle-Dugas
2013	Jennifer Knapp-Spielman
2015	Cameran Brooks
2015	Steven November
Ross	Danielle Simpson
2013	Stacey Fox
2011	Elijah Rooney
2011	Ashleigh Rhoades
2011	Jessica Mack
2011	Santiago Dias
2011	Brandon Culbertson
2011	Michael Raposo
2010	Lauren Ball (withdrew for medical reasons)
2009	Kristen Ramella
2009	Christine Higbie
2008	Marcy Milkowski
2007	Stefanie Gelhardt
2007	Kelly Kirk
2007	Marisa Bezjian
2007	Ian Hendricks
2005	Jennifer Dean

UNDER GRADUATE STUDENT SUPERVISION (INDIVIDUAL INVESTIGATION PROJECT):

UF Class		
2005	Amanda Alexander	ZOO 4905 (3 credits)

PROFESSIONAL STUDENT SUPERVISION (INDIVIDUAL INVESTIGATION PROJECT):

UF Veterinary Class	
2013	Carla Barnard
2011	Santiago Diaz
2010	Amanda Alexander
2010	Anna Boswell
2008	Steven Blaustein
2005	Michael Wong

GRADUATE STUDENT SUPERVISION:

2012	Jennifer McGee	PhD	Committee Member
2010	James Wellehan	PhD	Committee Member
2003	Martha Keller	MS	Committee Member

CURRENT CLINICAL SERVICE:

- A. Faculty member in Exotic, Wildlife, and Zoo Animal Medicine Service
 - a. Service Chief (2006, 2007, 2008, 2009)
 - b. Responsibilities include receiving clients with patients, emergency coverage, professional consultations, and referral veterinary consultations
 - c. Help supervise residents
 - d. Instruct senior veterinary students each clinical rotation period.

PROFESSIONAL SERVICE:

1. Membership in professional organizations

American Veterinary Medical Association
 American Association of Zoo Veterinarians
 Association of Avian Veterinarians
 American Zoo and Aquarium Association
 International Society for Infectious Diseases
 American Association of Veterinary Clinicians
 Elephant Managers Association
 The Society of Phi Zeta

2. Journal Editor and Reviewer

Reviewer, Current Drug Delivery, 2005-present
 Reviewer, Journal of Zoo and Wildlife Medicine, 2001- present
 Reviewer, Laboratory Animals, 2005
 Reviewer, Journal of Herpetological Medicine and Surgery, 2005
 Reviewer, Veterinary Medicine, 2000
 Associate Editor, Journal of Avian Medicine and Surgery, 1998-2000

3. College of Veterinary Medicine Committees

CVM Promotion and Tenure Committee, 2011-present
CVM Research Committee, 2005-2010
CVM Promotion and Tenure Committee, 2008-2009
Information Technology Advisory Committee, 2004-2008
Clinical Research Review Committee, 2004-2008
Search and Screen Committees;
Clinical Instructor of Zoological Medicine, 2012
Department of Small Animal Clinical Sciences, Department Chair, 2010
Clinical Instructor of zoological Medicine, 2007
Clinical Assistant Professor Anesthesiology, 2005
Clinical Assistant Professor Anatomic athology, 2005
Assistant Professor of Marine Mammal/Aquatic Animal Medicine, 2005

4. Professional Committees and Working groups

International Elephant Foundation. International Elephant Tuberculosis Workshop.
Invited delegate.
Annual Meetings 2007 - 2012.
Established future research priorities for tuberculosis in elephants.

Elephant Endotheliotropic Herpes Virus Workshop.
Invited delegate.
Houston, Texas, September 27-29, 2005,
Copenhagen, Denmark, October 18-20, 2006,
Orlando, Florida, November 2, 2007
Houston, Texas, January 26-27, 2009
St. Louis, Missouri, December 7, 2009
Established future research priorities for this important disease of elephants.

Management and Research Priorities of Tuberculosis for Elephants in Human Care – Stakeholders Task Force.
Invited delegate.
Fort Worth, Texas, August 1-2, 2011
Tulsa, Oklahoma, July 9-10, 2012

The Association of Schools for Public Health (ASPH). Public Health Preparedness and Response, Core Competency Development Project.
Invited participant - Respondent to stakeholder input.
July 26, 2010.
Provided veterinary expertise to develop a model of core competencies for the public health workforce. A collaboration between ASPH and the CDC.

Florida Wildlife Rehabilitation – What is the Future?
Invited delegate.
Orlando, Florida, April 14, 2009
Assessed and discussed Florida’s wildlife rehabilitation system.

Member, National Tuberculosis Working Group for Zoo and Wildlife Species
1997 - 2008.

Contributed to the publication of “Guidelines for the control of tuberculosis in elephants”, www.aphis.usda.gov/ac/elephTBGuidelines2000.html. Used as the basis for USDA – Animal Care Policy #21.

Giraffe Parasite Control Strategic Workshop and Roundtable. Invited delegate.
June 27, 2007

Discuss methods of parasite control in captive Giraffes housed in Florida zoological collections. Hosted by Disney’s Animal Kingdom, Disney’s Animal Programs.

Global Elephant Management Program. Member of elephant tuberculosis specialist list.
October 10, 2007.

International group of veterinary specialists that provide information and consultations for elephant tuberculosis.

The Global Elephant Management Program, Veterinary Specialists experienced with Elephant Diseases. Invited Member.
2007-present.

Member, Executive Committee for the Aquatic Animal Health Program, University of Florida, 2006-present

Elephant Tuberculosis Research Workshop. Invited delegate.
Orlando, Florida, May 21-22, 2005.

Established future research priorities for tuberculosis in elephants.

Member, Examination Committee, American College of Zoological Medicine. 2001-2004.

Member, American College of Zoological Medicine Workshop on Veterinary Curricula, November 9-12, 2000.

Contributed to the publication of “American College of Zoological Medicine recommendations on veterinary curricula”, *Journal of the American Veterinary Medical Association*. 219:1532-1535, 2001.

Research Committee (Co-Chair), American Association of Zoo Veterinarians, 1996-1997.

5. Professional Consultations

1998 - Present Ringling Brothers and Barnum and Bailey Circus, Feld Entertainment, Inc.,
Vienna, VA

Provide ongoing consultation and clinical support including diagnosis, treatment, and prevention of tuberculosis in elephants. Staff training classes in emergency escape procedures. Development of preventive medicine programs for performance animals and animals in the breeding facilities.

- 2001 Expert witness for litigation involving hedgehogs.
Provided expert testimony for Sanders, Conkright and Warren LLP,
File No 469-77.
- 1998 Fundación Jardín Botánico y Zoológico, Asunción Zoo.
Asunción, Paraguay, South America
Site visit and consultation regarding a hippo epizootic. Provided
medical and husbandry recommendations.
- 1998 Utah's Hogle Zoo
Salt Lake City, Utah
Provided a comprehensive evaluation of the existing
veterinary program and zoo hospital. Made recommendations to meet
and exceed AZA accreditation standards.

RESEARCH INTERESTS:

- A. Elephant diseases, management, and physiology
- B. Zoonotic diseases of non-domestic species
- C. Epidemiology in captive animal populations
- D. Pharmacokinetics in non-domestic species
- E. Public health and regulatory issues pertaining to non-domestic species

GRANTS AND CONTRACTS:

- 2012 National Institutes of Health.
Clinical and Translational Science Institute KL2 Scholarship.
Isaza R (PI)
Budget \$ 6,563 for 1 year. **Funded,**
(UF DSR # 12062448, Project # 00103155).
“Risks of working with tuberculosis infected elephants.”
- 2012 National Institutes of Health.
Clinical and Translational Science Institute KL2 Scholarship.
Isaza R and David Nelson (PI)
Budget \$44,976 for salary support 4/1/12 – 8/15/12. **Funded,**
(Project # 00100850, NIH # KL2 RR029888).
“Risks of working with tuberculosis infected elephants.”
- 2012 International Elephant Foundation.
Miller M (PI), Olea-Popelka F, Deem S, **Isaza R**, Riddle H, and Schmitt D.
Budget \$9,700 for 1 year. **Funded.**
“Epidemiology of risk factors and detection of tuberculosis in elephants”.

- 2011 CVM Spring Consolidated Faculty Research Development Award Grant Competition. Samuelson D (PI), McGee J, and **Isaza R**. Budget \$7,500 for 1 year. **Funded**.
“Baseline circulating and secreted immunoglobulin G levels in Paenungulata.”
- 2011 National Institutes of Health. Clinical and Translational Science Institute KL2 Scholarship. **Isaza R** (PI) Budget \$ 6,845 for 1 year. **Funded**,
(UF DSR # 11061557, Project # 00095724).
“Risks of working with tuberculosis infected elephants.”
- 2011 National Institutes of Health. Clinical and Translational Science Institute KL2 Scholarship. **Isaza R** (PI) Budget \$ 8,155 for 1 year. **Funded**,
(UF DSR # 11091956, Project # 00095724),
“Risks of working with tuberculosis infected elephants.”
- 2011 National Institutes of Health. Clinical and Translational Science Institute KL2 Scholarship. **Isaza R** and David Nelson (PI) Budget \$119,936 for salary support 4/1/11 – 3/30/12. **Funded**,
(Project # 00094010, NIH # KL2 RR029888).
“Risks of working with tuberculosis infected elephants.”
- 2010 Morris Animal Foundation, Veterinary Student Scholar Grant Program **Isaza R** (PI), Carla Bernal (veterinary student) Budget \$2,000 for 1 year. **Funded**,
(UF DSR # 10021213, Project # 00086624, MAF # D09ZO-617).
“Retrospective study of transmission of endotheliotropic elephant herpesvirus.”
- 2010 National Institutes of Health. Clinical and Translational Science Institute KL2 Scholarship. **Isaza R** (PI) Budget \$27,000 for 1 year. **Funded**,
(UF DSR # 10012955, Project # 00086309).
“Risks of working with tuberculosis infected elephants.”
- 2010 National Institutes of Health. Clinical and Translational Science Institute KL2 Scholarship. **Isaza R** and David Nelson (PI) Budget \$117,436 for salary support 4/1/10 – 3/30/11. **Funded**,
(Project # 00087428, NIH # KL2 RR029888).
“Risks of working with tuberculosis infected elephants.”
- 2009 National High Magnetic Field Laboratory. Nader P, Alexander A, and **Isaza R**. Budget \$2,000 for 1 year. **Funded**,
(ML-ISAZA-001).
“Anatomy of the Asian elephant (Elephas maximus) front foot: Anatomical description, imaging, interpretation, and clinical relevance.”

- 2009 CVM Spring Consolidated Faculty Research Development Award Grant Competition. Samuelson D (PI), McGee J, and **Isaza R**. Budget \$9,205.50 for 1 year. **Funded**. “Purification and identification of secretory immunoglobulin A (sIgA) from the west Indian manatee and the development of a monoclonal antibody.”
- 2009 Morris Animal Foundation, Established Investigator. Division of Wildlife and Special Species. McGee J (PI), **Isaza R**, and Samuelson D. Budget \$8,524 for 1 year. **Not Funded**. “Purification and identification of secretory immunoglobulin A (sIgA) from the West Indian manatee and the development of a monoclonal antibody.”
- 2009 National Institutes of Health. Clinical and Translational Science Institute KL2 Scholarship. **Isaza R** (PI) Budget \$74,219 for salary support 8/16/09 – 3/30/10. **Funded, (Project # 00082965, NIH # KL2 RR029888)**. “Risks of working with tuberculosis infected elephants.”
- 2008 Morris Animal Foundation, Veterinary Student Scholar Grant Program **Isaza R** (PI), and Diaz S. (veterinary student) Budget \$2,000 for 1 year. **Funded, (UF DSR # 8013011, Project # 00074259)**. “Use of elephant-specific monoclonal antibodies and recombinant antigens of *Mycobacterium tuberculosis* to improve an ELISA test for elephants.”
- 2008 Morris Animal Foundation, Established Investigator. Division of Wildlife and Special Species. Fouraker M and **Isaza R** (Co-PI). Budget \$72,800 for 1 year. **Not Funded**. “Study to reduce elephant deaths caused by Endotheliotropic Elephant Herpesvirus (EEHV).”
- 2007 Morris Animal Foundation, Veterinary Student Scholar Grant Program **Isaza R** (PI), and Alexander A. (veterinary student) Budget \$4,000 for 1 year. **Funded, (UF DSR # 7052103, Project # 00067982)**. “Techniques in digital radiology of Asian elephants (*Elephas maximus*) feet.”
- 2007 Southeast Regional Center of Excellence for Emerging Infections and Biodefense. Isaza R (PI), Crawford J, Lauzardo, M, Brown M, and Antony V. Budget \$144,474 for 2 years. **Not Funded**. “Novel Risks of Working with Elephants”.
- 2007 International Elephant Foundation **Isaza R** (PI), Wellehan JWX, Hernandez J. Budget \$35,000 for 1 year. **Funded, (UF DSR # 6100501, Project # 00064309)**. “Epidemiology of endotheliotropic elephant herpesvirus in North America.”

- 2006 CVM Resident Intramural Competitive Grants Program
Myers D, **Isaza R**, Harr K.
Budget \$2,000 for 1 year. **Funded**,
(Project # 00065740).
“Evaluation of Acute Phase Proteins for Diagnosis of Inflammation in Asian Elephants (Elephas maximus).”
- 2006 CVM Spring Consolidated Faculty Research Development Award Grant Competition
Isaza R, and Long M.
Budget \$7,500 for 1 year. **Funded**,
(Project # 00061735).
“Development of IgG antibody reagents for the measurement of serological responses in Asian elephants (Elephas maximus).”
- 2006 NIH - Mentored Clinical Scientist Research Career Development Award (K08).
Isaza R (PI), Crawford J, Lauzardo, M, Brown M, and Antony V.
Budget \$566,851 for 4 years. **Not Funded**.
“Occupational Zoonotic Risks of Working With Tuberculosis Infected Elephants”.
- 2004 CVM Resident Intramural Competitive Grants Program
Siegal-Willott J, **Isaza R**, Blaik M, Johnson M.
Budget \$2,000 for 1 year. **Funded**.
Distal Limb Anatomy of the Asian Elephant (Elephas maximus): Anatomical Description, Imaging, Interpretation, and Clinical Relevance.
- 2003 Morris Animal Fund
Cole A, Mutlow A, **Isaza R** (Co-Investigator), Carpenter JW, and Hunter R.
Budget \$14,364 for 1 year. **Funded**.
Pharmacokinetics and pharmacodynamics of carfentanil and naltrexone in the common eland antelope (Taurotragus oryx)
- 2002 Dean's Fund Research Project, Kansas State University
Isaza R (Principle Investigator) and Hunter R.
Budget \$5,000 for 2 years. **Funded**.
The Pharmacokinetics and Metabolism of Butorphanol in Elephants (*Elephas maximus*)
- 2002 Dean's Fund Research Project, Kansas State University
Hunter R (Principle Investigator) and **Isaza R**.
Budget \$5,000 for 1 year. **Funded**.
Topical Absorption and Quill Distribution of selmectin in hedgehogs (Atelerix albiventris).
- 2002 Department of Clinical Sciences Teaching Grants, Kansas State University
Isaza R (Principle Investigator), Hoskinson, J.
Budget \$2,000 for 1 year. **Funded**.
Use of multimedia in teaching avian clinical cases to veterinary students.
- 2001 Dean's Fund Research Project, Kansas State University
Isaza R (Principle Investigator), Mutlow A, Hunter R.
Budget \$5,000 for 1 year. **Funded**.

Pharmacokinetics and Pharmacodynamics of Three Alternative Routes of Naltrexone for the reversal of carfentanil immobilization in domestic goats.

- 2001 Morris Animal Fund
Hunter R. and **Isaza R** (Co-Principle Investigator), Carpenter J.
Budget \$16,191 for 1 year. **Funded**.
The effects and pharmacokinetics of a transmucosal fentanyl formulation in apes.
- 2001 Morris Animal Fund
Hunter R. and **Isaza R** (Co-Principle Investigator), Gnad D.
Budget \$56,360 for 1 year. **Funded**.
Study of the pharmacokinetics of topical doramectin and moxidectin in camelids.
- 2001 USRG Kansas State University
Carpenter J, Hunter R., **Isaza R**, Pollock C.
Budget \$2,000 for 1 year. **Funded**.
Pharmacokinetics of azithromycin and marbofloxacin in the cockatiel.
- 2001 Busch Entertainment Corporation
Hunter R., **Isaza R** (Co-Principle Investigator), Dumonceux G.
Budget \$5,104 for 1 year. **Funded**.
The pharmacokinetics and metabolism of ceftiofur in elephants (Elephas maximus).
- 2000 Clinical-Resident Research Program, Kansas State University
Hunter R., **Isaza R** (Clinical Mentor), Coke R.
Budget \$5,000 for 1 year. **Funded**.
Single dose pharmacokinetics of azithromycin in ball pythons (Python regius).
- 2000 Dean's Fund Research Project, Kansas State University
Hunter R., **Isaza R** (Co Investigator).
Budget \$5,000 for 1 year. **Funded**.
The pharmacokinetics and bioavailability of ketoprofen in elephants.
- 1999 Department of Clinical Sciences Teaching Grants, Kansas State University
Isaza R (Principle Investigator), Hoskinson, J, Carpenter J.
Budget \$1,000 for 1 year. **Funded**.
Use of multimedia in teaching avian radiology to veterinary students.
- 1991 Resident Grant Competition, University of Florida
Isaza R (Principle Investigator), Courtney C, Kollias G.
Budget \$1,900 for 1 year. **Funded**.
Anthelmintic resistance in exotic ungulates.
- 1990 Mr. Fables Wildlife Conservation Fund
Isaza R (Principle Investigator), Baker B, Budsberg S.
Budget \$1,000 for 1 year. **Funded**.
Pharmacokinetics of ciprofloxacin in red tailed hawks.

SCHOLARLY WRITING:**1. Peer Reviewed Publications:**

- 1) Emerson JA, Case JB, Brock AP, Vigani A, Graham DR, **Isaza R**. 2013. Single-incision, multicannulated, laparoscopic ovariectomy in two tigers (*Panthera tigris*). *Veterinary Quarterly*. Published on-line <http://dx.doi.org/10.1080/01652176.2013.783951>.
- 2) Feldman M, **Isaza R**, Prins C, Hernandez J. 2013. Point prevalence and incidence of *Mycobacterium tuberculosis* complex in captive elephants in the United States of America. *Veterinary Quarterly*. 33(1):25-29.
- 3) Wong AM, **Isaza R**, Cuthbert JK, Brooks DE, Samuelson DA. 2012. Periocular anterior anatomy and clinical adnexal examination of the adult Asian elephant (*Elephas maximus*). *Journal of Zoo and Wildlife Medicine*. 43(4):792-800.
- 4) Brock AP, **Isaza R**, Hunter RP, Richman LK, Montali RJ, Schmitt DL, Koch DE, and Lindsay WA. 2012. Initial estimates of the pharmacokinetics of famciclovir and its active metabolite penciclovir in young Asian elephants (*Elephas maximus*). *American Journal of Veterinary Research*. 73:1996-2000.
- 5) Hall NH, **Isaza R**, Hall JS, Wiedner EB, Conrad BL and Wamsley HL. 2012. Serum osmolality and effects of water deprivation in captive Asian elephants (*Elephas maximus*). *Journal of Veterinary Diagnostic Investigation*. 24(4): 688-695.
- 6) Wiedner EB, Lindsay WA and **Isaza R**. 2012. Management of zebras and zebra hybrids. *Compendium: Continuing Education for Veterinarians*. 34(9):E1-E9. Published online September, 2012. Vetlearn.com. https://www.vetlearn.com/_preview?_cms.fe.previewId=8881bf40-dfd8-11e1-aa85-005056ad4736
- 7) Aitken-Palmer C, **Isaza R**, Pope B, and Reese D. 2012. Delayed growth in a young fruit bat (*Pteropus pumilus*) due to nutritional hypovitaminosis C. *Veterinary Record*. 170: 22-23.
- 8) Wiedner EB, Peddie J, Peddie LR, Abou-Madi N, Kollias GV, Doyle C, Lindsay WA, **Isaza R**, Terrell S, Lynch TM, Johnson K, Johnson G, Sammut C, Daft B, and Uzal F. 2012. Strangulating intestinal obstructions in four captive elephants (*Elephas maximus* and *Loxodonta africana*). *Journal of Zoo and Wildlife Medicine*. 43(1):125-130.
- 9) Coomer AR, Lewis DD, Wiedner E, **Isaza R**, Winter MD, Aloisio F, Pool R. 2012. Stabilization of Juxta-Physeal Distal Tibial and Fibular Fractures in a Juvenile Tiger Using a Hybrid Circular–Linear External Fixator. *Veterinary Surgery*. 42(2):248-253.
- 10) Aitken-Palmer C, **Isaza R**, Dunbar M, Blackwood S, Gerlach T, and Russel K. 2011. Anterior uveitis as an atypical presentation of large granular lymphoma in a caracal (*Caracal caracal*). *Veterinary Ophthalmology*. 14(5):337-340.
- 11) Wiedner EB, Takeuchi NY, **Isaza R**, and Barber D. 2011. Baseline levels of trace metals in blood of captive Asian elephants (*Elephas maximus*). *Journal of Zoo and Wildlife Medicine*. 42(2): 360-362.
- 12) Ferraz VCM, Ferrigno CRA, **Isaza R**, Pozzi A, Myers D, Atkins A, Wellehan JFX, Ito K, and Romano L. 2010. Treatment of tarsal joint deformities with dynamic external fixators in 3 young birds. *Veterinary and Comparative Orthopaedics and Traumatology*. 23(5):362-365.

- 13) Tana LM, **Isaza R**, Koch DE, and Hunter RP. 2010. Pharmacokinetics and intramuscular bioavailability of a single dose of butorphanol in Asian elephants (Elephas maximus). *Journal of Zoo and Wildlife Medicine*. 41(3): 418-425.
- 14) Lindsay WA, Wiedner EB, **Isaza R**, Townsend HG, Boleslawski M, and Lunn DP. 2010. Immune responses of Asian elephants (Elephas maximus) to commercial tetanus toxoid vaccine. *Veterinary Immunology and Immunopathology*. 133(2-4):287-289.
- 15) Wiedner EB, Alleman R, and **Isaza R**. 2009. Urinalysis in Asian elephants (Elephas maximus). *Journal of Zoo and Wildlife Medicine*. 40(4):659-666.
- 16) Myers DA, **Isaza R**, Ben-Shlomo G, Abbott J, and Plummer CE. 2009. Fungal keratitis in a gopher tortoise (Gopherus polyphemus). *Journal of Zoo and Wildlife Medicine*. 40(3):579-582.
- 17) Myers DA, Wellehan JFX, and **Isaza R**. 2009. Saccular lung cannulation in a ball python (Python regius) to treat a tracheal obstruction. *Journal of Zoo and Wildlife Medicine*. 40(1):214-216.
- 18) Hunter RP and **Isaza R**. 2008. Concepts and issues with interspecies scaling in zoological pharmacology. *Journal of Zoo and Wildlife Medicine*. 39(4):517-526.
- 19) Siegal-Willott J, **Isaza R**, Johnson R, and Blaik M. 2008. Distal limb radiography, ossification, and growth plate closure in the juvenile Asian elephant (Elephas maximus). *Journal of Zoo and Wildlife Medicine*. 39(3):320-334.
- 20) Wiedner EB, Gray C, Rich P, Jacobson GL, **Isaza R**, Schmitt D, and Lindsay WA. 2008. Nonsurgical repair of an umbilical hernia in two Asian elephant calves (Elephas maximus). *Journal of Zoo and Wildlife Medicine*. 39(2):248-251.
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1. Scientific Presentations:

- 1) Prevalence of tuberculosis in North American elephants. Management and Research Priorities of Tuberculosis for Elephants and Human Care – Stakeholders Task Force, 2nd Annual Meeting. Tulsa, Oklahoma, July 9-10, 2012.
- 2) Discordance between USDA administered Chem-Bio ElephantTB StatPak® tests and MAPIA™ results for tuberculosis in Asian elephants (*Elephas maximus*). Tuberculosis in Elephants: Science, Myths, and Beyond. APHIS Center for Animal Welfare. Kansas City, Kansas, April 6, 2011.
- 3) Rabbit dentistry. World Congress of Veterinary Medicine. Mexico City. August 15, 2010.
- 4) Infectious diseases of ferrets. World Congress of Veterinary Medicine. Mexico City. August 15, 2010.
- 5) Advanced radiology of non-domestic companion animals. Primera Conferencia Internacional de AMMVEZOO / DEFSAL / IMFAC. Universidad National Autonoma de Mexico. Mexico City. June 28, 2010.
- 6) Respiratory diseases and physiology of captive elephants. Primera Conferencia Internacional de AMMVEZOO / DEFSAL / IMFAC. Universidad National Autonoma de Mexico. Mexico City. June 29, 2010.
- 7) Tuberculosis in captive elephants: Diagnostics and public health implications. Primera Conferencia Internacional de AMMVEZOO / DEFSAL / IMFAC. Universidad National Autonoma de Mexico. Mexico City. June 29, 2010.
- 8) Advanced radiology of zoo animals; clinical cases. Primera Conferencia Internacional de AMMVEZOO / DEFSAL / IMFAC. Universidad National Autonoma de Mexico. Mexico City. June 29, 2010.

- 9) Parasite control programs in zoo ungulates. Congreso Veterinario de Leon (CDVL). Leon, Mexico. September 3, 2009.
- 10) Update of reptile viral diseases. Congreso Veterinario de Leon (CDVL). Leon, Mexico. September 3, 2009.
- 11) Drug treatment for megavertebrates. Congreso Veterinario de Leon (CDVL). Leon, Mexico. September 2, 2009.
- 12) Basic pharmacology for zoo animals. Congreso Veterinario de Leon (CDVL). Leon, Mexico. September 2, 2009.
- 13) Elephant medicine “101”. National Symposium, American Pre-Veterinary Medical Association. Gainesville, Florida. March 9, 2008.
- 14) Careers in Zoological Medicine. National Symposium, American Pre-Veterinary Medical Association. Gainesville, Florida. March 9, 2008.
- 15) The elephant foot: An update on diagnostic techniques. 2008 Elephant Managers Association Conference. Orlando, Florida. October 5, 2008.
- 16) Elephant dental diseases. 10th World Veterinary Dental Congress. Guarujá, Sao Paulo, Brazil, April 25-27, 2007.
- 17) Elephant dental diseases: A review of anatomy and selected clinical procedures. Cornell Special Species Symposium. Cornell University, New York College of Veterinary Medicine, Ithaca, New York, April 20-22, 2007.
- 18) Pharmacokinetics in non-domestic species. Cornell Special Species Symposium. Cornell University, New York College of Veterinary Medicine, Ithaca, New York, April 20-22, 2007.
- 19) Elephant Endotheliotropic Herpesvirus (EEHV) review and update. International Elephant Conservation and Research Symposium, Copenhagen, Denmark, October 21, 2006.
- 20) Pocket pet zoonotic diseases. Florida Veterinary Medical Association, 76th annual conference. Orlando, Florida. September 9, 2005.
- 21) Famciclovir pharmacokinetics in young Asian elephants (Elephas maximus). American Association of Zoo Veterinarians Annual Conference. Minneapolis, Minnesota. October 4-10, 2003.
- 22) Reptile viruses you will see in practice. 64th Annual Conference for Veterinarians. Manhattan, Kansas. June 2-5, 2002.
- 23) A Trunk Wash Technique for the Diagnosis of Tuberculosis in Elephants: An update. Annual Conference of the Elephant Managers Association. Orlando, Florida. November 9-11, 2001.
- 24) Clinicopathologic findings in Mycobacterium tuberculosis culture positive Asian elephants (Elephas maximus) in comparison to clinically normal elephants. AAZV, AAWV, ARAV, NAZWV Joint Conference. Orlando, Florida. September 18-23, 2001.
- 25) The Gen-Probe Amplified M. tuberculosis Direct Test (MTD) as a diagnostic test for tuberculosis in elephants. Fifth Annual International Elephant Research Symposium. Portland, Oregon. June 2-3, 2000

- 26) Current Diagnostic Capabilities for Exotic Animals. 2000 Kansas Veterinary Medical Association Annual Meeting. Topeka, Kansas. January 13, 2000.
- 27) Fad Pets: An Overview. Mid-Western Exotic Animal Medicine Conference (8th Annual). Manhattan, Kansas. October 23-24, 1999.
- 28) A practical review of the trunk wash technique and some preliminary results. Elephant Managers Association Conference and Fourth International Elephant Research Symposium. Atlanta, Georgia. June 17-22, 1999.
- 29) Metabolic scaling. 61st Annual Conference for Veterinarians. Manhattan, Kansas. June 6-9, 1999.
- 30) Bone diseases in reptiles. Mid-Western Exotic Animal Medicine Conference (7th Annual). Manhattan, Kansas. October 10-11, 1998.
- 31) Reptile medicine short course. Presented 9 lecture hours. The XVIII Congress of the Brazilian Zoological Society. Rio de Janeiro, Brazil. May, 1994.
- 32) Control of parasites in captive exotic ungulates. The North American Veterinary Conference. Orlando, Florida. January 15-20, 1994.
- 33) The prevalence of benzimidazole resistance in antelope collections in Florida. The Annual Meeting of the American Association of Zoo Veterinarians. St. Louis, Missouri, October 10-15, 1993.

2. Invited Lectures:

- 1) Zoonotic tuberculosis. Invited lecture: Southeastern National Tuberculosis Center, Comprehensive clinical TB course. Gainesville, Florida, Dec 5, 2013.
- 2) Tuberculosis in Elephants: Science, Myths, and Beyond. Invited Lecture: Discordance between USDA administered Chem-Bio ElephantTB StatPak® tests and MAPIATM results for tuberculosis in Asian elephants (*Elephas maximus*). APHIS Center for Animal Welfare. Kansas City, Kansas, April 6, 2011.
- 3) Bangladesh Agricultural Research Counsel. Invited lecture: Diagnostic tests for M. bovis in domestic species. Dhaka Bangladesh. May 4, 2010.
- 4) Elephant tuberculosis and herpes viruses in captive Asian elephants. Invited Seminar: Bangladesh Society of Microbiologists. Dhaka Bangladesh. May 10, 2010.
- 5) Aquatic Animal Health Seminar, Fall Seminar Series. University of Florida, College of Veterinary Medicine. Invited lecture: "Elephants: A new aquatic species". Gainesville, Florida, October 6, 2008.
- 6) Elanco Animal Health (Lilly) Pharmaceutical Company. Invited lecture: "Drug delivery to minor species". Indianapolis, Indiana. October 3, 2005.
- 7) North Carolina State University, Animal Science (ANS 400). Invited Lecture: "Animal welfare and care of performing animals". Raleigh, North Carolina. February 7, 2002.
- 8) The University of Alabama in Huntsville. Invited Lecture in the Honors Forum: "Zoological medicine - a walk on the wild side". Huntsville, Alabama. November 8, 2001.

- 9) Cornell University, College of Veterinary Medicine. Zoo, Avian, and Wildlife Society. Invited Lecture: "Important diseases in Asian elephant medicine". Ithaca, New York. April 10, 2001.

3. Continuing Education Programs and Wet Labs:

1. University of Florida, College of Veterinary Medicine. Wildlife, Zoological, and Aquatic Medicine Club. "Darting and capture equipment for wild animals". Gainesville, Florida. November 27, 2012.
2. University of Florida, Liberal Arts and Sciences, Exotic Animal Club. "How to become a zoological medicine clinician" Gainesville, Florida. September 20, 2012.
3. University of Florida. College of Veterinary Medicine. Public Health Club. "Is zoological medicine the same as animal public health?". Gainesville, Florida, September 10, 2012.
4. University of Florida. College of Veterinary Medicine. Behavior Club. "Training and zoological medicine: Getting the elephant into the exam room." Gainesville, Florida, April 25, 2012.
5. University of Florida, Liberal Arts and Sciences, Exotic Animal Club. "Elephant medicine?" Gainesville, Florida. January 16, 2012.
6. University of Florida, Liberal Arts and Sciences, Exotic Animal Club. "A zoo vet's perspective on public health?" Gainesville, Florida. October 19, 2011.
7. University of Florida, College of Veterinary Medicine. Wildlife, Zoological, and Aquatic Medicine Club. "Wet Lab (4 hours): Darting practice". Gainesville, Florida. October 15, 2011.
8. University of Florida, College of Veterinary Medicine. Wildlife, Zoological, and Aquatic Medicine Club. "Darting and capture equipment for wild animals". Gainesville, Florida. October 13, 2011.
9. University of Florida, College of Veterinary Medicine. Wildlife, Zoological, and Aquatic Medicine Club. "The elephant physical examination". Gainesville, Florida. October 3, 2011.
10. University of Florida, Liberal Arts and Sciences, Exotic Animal Club. "Zoological Medicine: What is it and are there any jobs?" Gainesville, Florida. February 22, 2011.
11. University of Florida, College of Veterinary Medicine. Wildlife, Zoological, and Aquatic Medicine Club. "The elephant physical examination". Gainesville, Florida. November 2, 2010.
12. University of Florida, College of Veterinary Medicine. Freshman Orientation, Veterinary Class of 2014. Veterinary medicine in public health. Gainesville, Florida. August 17, 2010.
13. University of Florida, College of Veterinary Medicine. Wildlife, Zoological, and Aquatic Medicine Club. "Employment opportunities in zoological medicine". Gainesville, Florida. March 16, 2010.
14. University of Florida, College of Veterinary Medicine. Wildlife, Zoological, and Aquatic Medicine Club. "Wet Lab (4 hours): Darting practice". Gainesville, Florida. September 21, 2009.
15. University of Florida, College of Veterinary Medicine. Wildlife, Zoological, and Aquatic Medicine Club. "Remote darting systems". Gainesville, Florida. September 20, 2009.

16. University of Florida. College of Veterinary Medicine. Behavior Club. "Behavior in zoological medicine". Gainesville, Florida, September 4, 2008.
17. Annual Meeting of the American Association of Zoo Veterinarians. Wet Lab (4 hrs): "Elephant medicine". Tampa, Florida, September 20, 2006.
18. Anesthesia Resident Seminar series. University of Florida, College of Veterinary Medicine. "Use of darting and capture equipment for wild animals". Gainesville, Florida. November 13, 2006.
19. Pulmonary Noon Conference lecture series. University of Florida, College of Medicine. "Elephants with human tuberculosis". Gainesville, Florida. June 27, 2006.
20. Referral Veterinarian Appreciation Day. "When to refer your rhino with rhinitis". Gainesville, Florida. July 8, 2006.
21. Annual Meeting of the American Association of Zoo Veterinarians. Wet Lab (4 hrs): Pharmacokinetics for the zoo veterinarian. Omaha, Nebraska, October 13, 2005.
22. St. George's University, School of Veterinary Medicine. "What's your diagnosis: Case reports from the zoological medicine ward". September 22, 2005.
23. St. George's University, School of Veterinary Medicine. "The elephant physical examination: What every veterinarian needs to know". September 14, 2005.
24. University of Florida, College of Veterinary Medicine. Wildlife, Zoological, and Aquatic Medicine Club. "The elephant physical examination". September 6, 2005.
25. University of Florida, College of Veterinary Medicine. Wildlife, Zoological, and Aquatic Medicine Club. "Zoological animal medicine". Gainesville, Florida. September 14, 2004.
26. University of Florida. "Current issues in Asian elephant medicine". Gainesville, Florida. December 12, 2002.
27. Mid-Western Exotic Animal Medicine Conference (11th Annual). Wet Lab (4 hrs): Diagnostic case challenges. Manhattan, Kansas. November 2-3, 2002.
28. Iowa State University, College of Veterinary Medicine. Zoo, Exotic, and Wildlife Club. "How to perform an elephant physical examination". Ames, Iowa. February 2, 2002.
29. North American Veterinary Conference. Wet Lab (6 hrs): Behind the scenes tour of the Center for Elephant Conservation and discussion of basic elephant medicine. Orlando, Florida. January 13, 2002.
30. Annual Conference of the Elephant Managers Association. Tour and wet lab (4 hrs): Behind the scenes tour for elephant management professionals of the Center for Elephant Conservation. Orlando, Florida. November 12, 2001.
31. Annual Meeting of the American Association of Zoo Veterinarians. Wet Lab (4 hrs): Pharmacokinetics for the zoo veterinarian. Orlando, Florida, September 19, 2001.
32. Annual Meeting of the American Association of Zoo Veterinarians. Wet Lab (8 hrs): Elephant Medicine Wet Lab. Orlando, Florida, September 18, 2001.

33. Kansas State University, Pre-Vet Club. "Careers in zoological medicine". Manhattan, Kansas. November 1, 2001.
34. Kansas State University, Student Chapter AAZV. "Hot topics in elephant medicine". Manhattan, Kansas. September 12, 2001.
35. Kansas State University, Student Chapter AAZV. "Big cat medicine". Manhattan, Kansas. April 17, 2001.
36. Kansas State University, Grand Rounds Lecture: What's your diagnosis: Anteater case report. Manhattan, Kansas. March 25, 2001.
37. Kansas State University, Student Chapter AAZV. Wet Lab (3.5 hrs): Advanced Avian Procedures. Manhattan, Kansas. February 17, 2001.
38. North American Veterinary Conference. Wet Lab (6 hrs): Behind the scenes tour of the Center for Elephant Conservation and discussion of basic elephant medicine. Orlando, Florida. January 16, 2001.
39. Mid-Western Exotic Animal Medicine Conference (9th Annual). Wet Lab (4 hrs): Comparative Anatomy of Exotic Animals: Clinical Implications. Manhattan, Kansas. October 29, 2000.
40. Kansas State University, Student Chapter AAZV. Wet Lab (4 hrs): Clinical Procedures in Reptiles. Manhattan, Kansas. October 7, 2000.
41. Special Short Course: Wildlife Handling and Immobilization for Researchers and Managers. Wet Lab (4 hrs): Darting Equipment Practical Laboratory. Manhattan, Kansas. November 13-14, 1999
42. Mid-Western Exotic Animal Medicine Conference (8th Annual). Wet Lab (4 hrs): Surgical Techniques used in Companion Birds. Manhattan, Kansas. October 24, 1999.
43. Kansas State University, Student Chapter AAZV. Wet Lab (4 hrs): Wildlife Pathology and Comparative Anatomy. Manhattan, Kansas. March 14, 1999.
44. Kansas State University. Grand Rounds Lecture: One Medicine, the Key to Veterinary Care. Manhattan, Kansas. Feb 14, 1999.
45. Iowa State University, College of Veterinary Medicine. Zoo, Exotic, and Wildlife Club. "Elephant tuberculosis". Ames, Iowa. February 2, 1999.
46. Kansas State University, Student Chapter AAZV. Wet Lab (4 hrs): Comparative Anatomy of Exotic Animals. Manhattan, Kansas. February 24, 1999.
47. Kansas State University, College of Veterinary Medicine. Student Chapter AAZV. "Examples of ethical dilemmas in zoo medicine". Manhattan, Kansas. October 15, 1998.
48. Mid-Western Exotic Animal Medicine Conference (7th Annual). Wet Lab (4 hrs): Critical Care and Diagnostic Techniques Used in Companion Birds. Manhattan, Kansas. October 11, 1998.
49. The Annual Meeting of the American Association of Zoo Veterinarians. Wet Lab (8 hrs): Avian Egg Incubation Workshops. Houston, Texas, November 12, 1997.
50. University of Florida SCAVMA National Convention. Wet Lab (6 hrs): Zoological Medicine; Practical Considerations. Gainesville, Florida, April 11, 1993.

3. Public Presentations:

- 1) FAMU Agriculture Discovery Program. "Adventures in zoological medicine". University of Florida, College of Veterinary Medicine, Gainesville, Florida. June 23, 2008.
- 2) Florida Tomorrow Kick-off, A Veterinary Medicine Showcase. "Wildlife and Zoo Medicine". University of Florida, College of Veterinary Medicine, Gainesville, Florida. September 28, 2007.
- 3) FAMU Agriculture Discovery Program. "Zoological medicine". University of Florida, College of Veterinary Medicine, Gainesville, Florida. June 25, 2007.
- 4) Welcome and Family Day Celebration. "Introduction to zoological medicine". University of Florida, College of Veterinary Medicine, Gainesville, Florida. August 18, 2006.
- 5) FAMU Agriculture Discovery Program. "Zoological medicine". University of Florida, College of Veterinary Medicine, Gainesville, Florida. June 21, 2006.
- 6) Hidden Oak Elementary School. "Zoo vet". Informal lecture given to the fifth grade class (approximately 120 students). Gainesville, Florida. April 31, 2006.
- 7) Mini-Vet School Program. "Zoological medicine". University of Florida, College of Veterinary Medicine, Gainesville, Florida. August 19, 2005.
- 8) FAMU Agriculture Discovery Program. "Zoological medicine". University of Florida, College of Veterinary Medicine, Gainesville, Florida. June 26, 2005.
- 9) Friends of Sunset Zoo, Annual Meeting. "Animals on the move, the care of Ringling Brothers animals". Manhattan, Kansas. February 17, 2003.
- 10) Topeka Zoological Park – WNV seminar for zoo employees. "West Nile Virus detection and vaccination in zoo animals". Topeka, Kansas. July 13, 2002.
- 11) Smokey Hill - Central Kansas Educational Service Center. "Career opportunities in zoological medicine". Salina, Kansas. October 10, 2000.
- 12) Los Angeles Zoo, Docent Training Program. "Preventive medicine in a zoological collection". Los Angeles, California. September 12, 1997.
- 13) The Greater Los Angeles Zoo Association (GLAZA), Member's Lecture Series. Invited Lecture: "What to do when your patient doesn't want his medicine: Treatment strategies for the zoo vet". Los Angeles, California. May 2, 1996.