

CURRICULUM VITAE

Cynthia Cole DVM, PhD, DACVCP
Clinical Associate Professor and Director, Racing Laboratory, University of Florida
Technical Partner, Digitalis Ventures
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336-937-3551

EDUCATION

1994	Ph.D.	College of Veterinary Medicine, University of Florida, Gainesville, Florida. Dissertation: Characterization of an allosteric enhancer of the A ₁ adenosine receptor.
1989	D.V.M.	College of Veterinary Medicine, University of Florida, Gainesville, Florida * with honors
1983	B.S.	University of Florida, Gainesville, Florida, Major: Zoology
1996	Diplomate	American College of Veterinary Clinical Pharmacology

PROFESSIONAL EXPERIENCE

Employer:	University of Florida
Location:	Gainesville, FL
Date(s):	Nov 2018 - Current
Title:	Associate Clinical Professor and Director, Racing Laboratory

Duties:	Responsible for managing the program and an annual budget of over 2 million dollars and 20 employees. The laboratory is certified as ISO17025 compliant and accredited by the RMTTC, annually tests over 60,000 equine and canine urine and blood samples collected from horses and dogs racing in Florida for the presence of nonpermitted medications and performance enhancing drugs. Represent the laboratory in court proceedings, testifying in support of positive analytical findings, and national and international meetings on regulatory and medication issues pertaining to canine and equine competitive events. Scholarly activities included pharmacodynamic and pharmacokinetic studies in a variety of species.
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Employer:	Digitalis Ventures
Location:	New York, NY
Date(s):	October 2018 - Current

Title: Technical Partner

Duties: Responsible for finding, reviewing and evaluating investment opportunities for the fund. In collaboration with other partners develop investment strategy, negotiate terms and align with other syndicate members as required. Fulfill board member duties as needed. Serve as the Digitalis liaison between the LEAP Accelerator Program, Mars Petcare, and other stakeholders as needed.

Employer: WISDOM HEALTH (formerly MARS VETERINARY)
 Location: Vancouver, WA
 Date(s): March 2017 - Current
 Title: General Manager

Duties: Provide the strategic vision and operational leadership for the Mars Veterinary business in order to ensure long term growth and profitability. Develop, manage, and implement both annual and long term marketing and operational plans, develop and prioritize business activities, programs, and proposals across multi-functional areas. Provide and role-model cultural leadership for the Mars Veterinary team associates.

Employer: ROYAL CANIN – A Division of MARS
 Location: Aimargues, France
 Date(s): March 2016 – March 2017
 Title: Global New Business Development Director (Temporary Global Assignment)

Duties: Royal Canin’s Vision is to become the reference in Health and Nutrition. To continue to push boundaries and generate category growth, the Global New Business Development Director is responsible for business diversification and income generation through the field of genetics, diagnostics and monitoring with the goal of linking them back to a food recommendation.

Employer: MARS VETERINARY
 Location: Portland, OR
 Date(s): Feb 2014 – March 2016
 Title: Director of Research &Development

Duties: Responsible for managing the technical development, translational research, and new product delivery, as well as enhancement of all MARS VETERINARY scientific product-based initiatives. Current product portfolio includes WISDOM PANEL, ROYAL CANIN’s Genetic Health Analysis, BANFIELD’s Canine Health Analysis, and Optimal Selection/MyDogDNA. Also responsible for the delivery and ongoing development of all science based R&D products from initial concept through to final validation, and accountable for the ongoing management of the quality processes and business systems (including laboratory external suppliers), that deliver the products to customers in an ongoing manner.

Employer: University of Florida, College of Medicine, Racing Laboratory
 Location: Gainesville, Florida
 Date(s): September 2013 – November 2018
 Title: Adjunct Professor

Duties: Provide guidance and analysis to the Racing Laboratory regarding drug and medication issues in racing dogs and horses. As needed, provide expert witness testimony to support analytical findings of the Racing Laboratory in regulatory hearings brought by the State of Florida, Division of Pari-mutuel Wagering.

Employer: Piedmont Animal Health
 Location: Greensboro, North Carolina
 Date(s): Nov 2010 – Feb 2014
 Title: Product Development Director

Duties: Responsible for providing scientific expertise throughout the drug development process. Duties include designing an overall development plan with input from internal and external colleagues as needed; executing all aspects of the development plan including selection of study sites, creation of study protocols/documents, management of study budgets and timelines, study oversight, and writing or editing and submission of final reports to Regulatory Affairs. Also responsible for providing technical advice to other Piedmont departments as needed.

Employer: Novartis Animal Health, US, Inc.
 Location: Greensboro, North Carolina
 Date(s): 2009 – Nov 2010
 Title: Manager, Clinical Development

Duties: Responsible for developing and implementing clinical and laboratory studies and bioequivalence trials in support of new animal drug applications in the most timely and cost efficient manner possible. These responsibilities included every aspect of the study such as study design, choosing the research facilities or clinical investigators, negotiating budgets, assuring compliance with NAH Quality and Animal Welfare guidelines, negotiating study specifics with regulatory authorities, and writing the final study reports. Within the context of International Project Teams, contributed to all aspects of clinical efficacy as well as assisting with other sub-team functions whenever needed. Actively Participated on industry group committees and scientific organizations to provide a voice for Novartis in those venues.

Employer: Nutramax Laboratories
 Location: Edgewood, MD
 Date(s): 2008-2009
 Title: Manager, Clinical Development

Duties: Responsible for developing and implementing clinical trial and bioequivalence studies in support of new and generic animal drug applications, respectively. In addition, developed and implemented clinical trials in support of new and existing nutritional supplement products. Provided technical expertise to sales and marketing staff for existing nutritional supplement products and to pre-development staff for potential new regulated and non-regulated products.

Employer: IDEXX Pharmaceuticals, Inc.
Location: Greensboro, NC
Date(s): 2006-2008
Title: Manager, Professional Services

Duties: Served as a technical liaison between IDEXX Pharmaceuticals, veterinarians, and the FDA/CVM for both companion animal and equine products. Proactively supported those products through the creation and review of technical materials and presentations for a variety of audiences. Played primary roles in developing, monitoring, and interpreting post-approval studies for both equine and companion animal products and in maintaining the pharmacovigilance program within IDEXX. On a routine basis, supported pre-clinical and clinical development projects within IDEXX, which included experimental protocol design and oversight of studies in target animal species, experimental models and clinical trials of naturally occurring disease. Worked closely with marketing to provide medical expertise and insight to develop and substantiate efficacy and safety claims.

Employer: University of Florida, College of Veterinary Medicine
Location: Gainesville, FL
Date(s): 2002-2006
Title: Associate Professor and Director of the Racing Laboratory

Duties: Responsible for managing the program and an annual budget of over 2 million dollars and 30 employees. The laboratory, which was certified as ISO17025 compliant, annually tested roughly 60,000 equine and canine urine and blood samples collected from horses and dogs racing in Florida for the presence of nonpermitted medications and performance enhancing drugs. Represented the laboratory in court proceedings, testifying in support of positive analytical findings, and national and international meetings on regulatory and medication issues pertaining to canine and equine competitive events. Scholarly activities included pharmacodynamic and pharmacokinetic studies in a variety of species. Didactic teaching and mentoring of veterinary and graduate students as well as post-doctoral fellows. Committee service included Co-chair of the USDA-mandated campus wide Institutional Animal Care and Use Committee.

Employer: K L Maddy Equine Analytical Chemistry Laboratory
Location: Davis, California
Date(s): 1995-2002
Title: Associate Professor of Clinical Pharmacology

Duties: Responsible for managing a new program for programmatic design and recruitment of staff and additional faculty, while serving as primary liaison between the fledging laboratory and the California horseracing industry. Scholarly activities focused on pharmacodynamic and pharmacokinetic studies in a variety of species, as well as teaching and training of graduate students and post-doctoral fellows.

Employer: American Heart Association
Location: Gainesville, Florida
Date(s): 1994-1995
Title: Post-doctoral Fellow

Duties: Primary Focus- During my post-doctoral fellowship I established several CHO cell lines stably expressing a number of different human adenosine receptors. The most intriguing result of this project was the finding that receptor-mediated effects were present in the absence of agonist stimulation in cells over expressing recombinant receptors as detailed in Kollias-Baker et al., 1997.

Employer: Tuft's University, School of Veterinary Medicine
Location: Grafton, Massachusetts
Date(s): 1989-1990
Title: Intern

Duties: Large Animal Surgery and Medicine with an Emphasis in Equine Sports Medicine

PROFESSIONAL AND SCIENTIFIC ORGANIZATIONS

American Association of Equine Practitioners
American Academy of Veterinary Pharmacology and Therapeutics

PUBLICATIONS/COURSES CONDUCTED PRESENTATIONS/AWARDS

PEER REVIEWED PUBLICATIONS

* Indicates graduate student, post-doctoral fellow or resident trainee for ACVCP board certification.

2017 Jonas Donner , Heidi Anderson, Stephen Davison, Angela M. Hughes, Julia Bouirmane, Johan Lindqvist, Katherine M. Lytle, Balasubramanian Ganesan, Claudia Ottka, Päivi Ruotanen, Maria Kaukonen, Oliver P. Forman, Neale Fretwell, Cynthia A. Cole, Hannes Lohi. **Frequency and distribution of 152 genetic disease variants in over 100,000 mixed breed and purebred dogs.** PLoS Genet 14(4): e1007361.

2012 Leclere M, Magdesian KG, Cole CA, Szabo NJ, Ruby RE, Rhodes DM, Edman J, Vale A, Wilson WD, Tell LA. **Pharmacokinetics and preliminary safety evaluation of azithromycin in adult horses.** J Vet Pharmacol Ther.35:541-9.

2009 Steffey EP, Brosnan RJ, Galuppo LD, Mama KR, Imai A, Maxwell LK, Cole CA, Stanley SD. **Use of propofol-xylazine and the Anderson Sling Suspension System for recovery of horses from desflurane anesthesia.** Vet Surg_38:927-33.

- 2009 Norsworthy, G, R Lynn, and C Cole. **Preliminary Study of Protamine Zinc Recombinant Insulin for the Treatment of Diabetes Mellitus in Cats.** Vet Therap. 10:24-28.
- 2009 Steffey, E, KR Mama, RJ Brosnan, A Imai, LK Maxwell, CA Cole, and SD Stanley. **Effect of the administration of propofol and xylazine hydrochloride on recovery of horses after four hours of anesthesia with desflurane.** AJVR 70:956-963.
- 2009 Nelson, RW, K Henley, C Cole, and the PZIR Clinical Study Group. **Field safety and efficacy of protamine zinc recombinant human insulin for treatment of diabetes mellitus in cats.** J Vet Intern Med 23:787-793.
- 2009 Elfenbein, JR, LC Sanchez, SA Robertson, CA Cole, R Sams. **Effect of detomidine on visceral and somatic nociception and duodenal motility in conscious adult horses.** Vet Anaesth and Analg 36:162 – 172.
- 2007 Sanchez, L, S Robertson, L Maxwell, K Zientek, C Cole. **Effect of fentanyl on visceral and somatic nociception in conscious horses.** J Vet Intern Med 21:1067-75.
- 2007 *Zientek, K, DF Anderson, K Wegner, C Cole. **The quantitation of procaine in equine plasma by liquid chromatography-linear ion trap mass spectrometry.** J of Anal Toxicol 31:87-92.
- 2007 *Kuchembuck, N, P Colahan, K Zientek, D Pirman, K Wegner, C Cole. **Plasma concentration and local anesthetic activity of procaine hydrochloride following subcutaneous administration to horses.** Am J Vet Res 68:495-500.
- 2007 Pascoe, P, J Ilkiw, C Craig, C Kollias-Baker. **The effects of ketamine on the minimum alveolar concentration of isoflurane in cats.** Vet Anaesth Analg 34:31-39.
- 2006 Liska, D, A Akucowich, R Marsella, L Maxwell, J Barbara, C Cole. **Pharmacokinetics of pentoxifylline and its 5-hydroxyhexyl metabolite after oral and intravenous administration of pentoxifylline to healthy adult horses.** Am J Vet Res 67: 1621-1627.
- 2005 White S, L Maxwell, N Szabo, J Hawkins, C Kollias-Baker. **Pharmacokinetics of azathioprine following single-dose intravenous and oral administration and effects of azathioprine following chronic oral administration in horses.** Am J Vet Res 66:1578-83.
- 2005 Graham, J, C Kollias-Baker, A Craigmill, S M Thomasy, KC Klasing, and LA Tell. **Pharmacokinetics of ketoprofen in Japanese Quail (Coturnix Japonica)** J Vet Pharmacol Ther. 28: 399-402.
- 2005 *Anderson, D., C. Kollias-Baker, P Colahan, RO Keene, RC Lynn, D I Hepler. **Urinary and serum concentrations of diclofenac after topical application to horses.** Vet Ther 6(1): 57-66.
- 2005 Mama, K. R., AE Wagner, EP Steffey, C Kollias-Baker, PW Hellyer, AE Golden, LF Brevard. **Evaluation of xylazine and ketamine for total intravenous anesthesia in horses.** Am J Vet Res 66(6): 1002-7.

- 2004 Bennett, R. C., E. P. Steffey, C Kollias-Baker, R Sams, R. **Influence of morphine sulfate on the halothane sparing effect of xylazine hydrochloride in horses.** Am J Vet Res 65(4): 519-26.
- 2004 Tesch, A., MH MacDonald, C Kollias-Baker, HP Benton. **Endogenously produced adenosine regulates articular cartilage matrix homeostasis: enzymatic depletion of adenosine stimulates matrix degradation.** Osteoarthritis Cartilage 12(5): 349-59.
- 2004 Thomasy, S M, N Slovis, LK Maxwell, C Kollias-Baker. **Transdermal fentanyl combined with nonsteroidal anti-inflammatory drugs for analgesia in horses.** J Vet Intern. Med18(4): 550-4.
- 2004 Wegner, K, S A Robertson, C Kollias-Baker, R Sams, WW Muir **Pharmacokinetic and pharmacodynamic evaluation of intravenous hydromorphone in cats.** J Vet Pharmacol Ther 27(5): 329-36.
- 2003 Kollias-Baker, C, LK Maxwell, S Stanley, and T Boone. **Detection and quantification of cocaine metabolites in urine samples from horses administered cocaine.** J Vet Pharmacol Ther 26:429-434
- 2003 Mawell, LK*, SM Thomasy, N Slovis C Kollias-Baker. **Pharmacokinetics of fentanyl following intravenous and transdermal administration in horses.** EVJ, 35:484-490.
- 2003 London, CA, AL Hannah, R Zadovoskaya, MB Chien, C Kollias-Baker, M Rosenberg, S Downing, G Post, J Boucher, N Shenoy, D B Mendel, G McMahon, J M Cherrington. **Phase I dose-escalation study of SU11654, a small molecule receptor tyrosine kinase inhibitor, in dogs with spontaneous malignancies.** Clin Cancer Res 9:2755-2768.
- 2002 Tesch, A, M MacDonald, C Kollias-Baker, HP Benton. **Extracellular adenosine accumulation by articular chondrocytes.** Osteoarthritis Cartilage_10:34-43.
- 2002 Peroni, D, S Stanley, C Kollias-Baker, NE Robinson. **Why is oral prednisone of limited efficacy in the horse?** EVJ 34:283-287.
- 2002 Kollias-Baker, C, R Sams. **Detection of morphine in blood and urine samples from horses administered poppy seeds and morphine sulfate orally.** J Anal Tox 26:81-86.
- 2002 Tesch AM, MH MacDonald, C Kollias-Baker, HP Benton. **Chondrocytes respond to adenosine via A₂ receptors and activity is potentiated by an adenosine deaminase inhibitor and a phosphodiesterase inhibitor.** Osteoarthritis Cartilage 10:34-40.
- 2001 Kollias-Baker, C, K Cox, J Jones. **Omeprazole does not affect physiological indices of performance of horses during incremental treadmill exercise.** Vet Ther_2:361-369.
- 2001 Hellyer, PW, KR Mama, HL Shafford, AE Wagner, CA Kollias-Baker. **The effect of diazepam on isoflurane-fentanyl minimum alveolar concentration in the dog.** Am J Vet Res 62:555-560.
- 2000 Nieto, JE, JR Snyder, CA Kollias-Baker, S Stanley. **In vitro effects of 5-hydroxytryptamine and cisapride on the circular smooth muscle of the jejunum of horses.** Am J Vet Res 61:1561-1565.

- 2000 Valverde CR, KR Mama, C Kollias-Baker, EP Steffey, JD Baggot. **Pharmacokinetics of fentanyl in isoflurane anesthetized Rhesus monkeys (*Macaca mulatta*)**. Am J Vet Res 61:931-934.
- 1999 Kollias-Baker, C. **Pharmacological effects of drugs in relation to detection times: setting decision levels**. Brazilian J Tox 11:11-13.
- 1999 Kollias-Baker, C. **Furosemide: the rationale for treating EIPH, regulatory issues, and controversies regarding its use**. Brazilian J Tox 11:31-36.
- 1998 Mama KR, PJ Pascoe, EP Steffey, C Kollias-Baker. **Comparison of two techniques for total intravenous anesthesia in horses**. Am J Vet Res 59:1292-1298.
- 1997 Kollias-Baker, C, J Ruble, M Jacobson, J K Harrison, M Ozeck, J C Shryock, L Belardinelli. **Agonist-independent effect of an allosteric enhancer of the A₁ adenosine receptor in CHO cell stably expressing the recombinant human A₁ receptor**. JPET 281:761-768.
- 1995 Ehrlich, P, H Seeherman, E Morris, C Kollias, W R Cook. **The effect of reversible left recurrent laryngeal neuropathy on the metabolic cost of locomotion and peak aerobic power in thoroughbred racehorses**. Vet Surg 24:36-48.
- 1994 Kollias-Baker C, J Xu, A Pelleg, L Belardinelli. **Novel approach for enhancing the atrioventricular nodal conduction delay mediated by endogenous adenosine**. Circ Res 75:972-980.
- 1994 Kollias-Baker C, J Ruble, D Dennis, RF Bruns, J Linden, L Belardinelli. **The allosteric enhancer, PD 81,723, acts by a novel mechanism to potentiate the cardiac actions of adenosine**. Circ Res 75:961-971.
- 1993 Kollias-Baker C, FS Pipers, D Hearrd, HJ Seeherman. **Pulmonary edema associated with transient upper airway obstruction in three horses**. JAVMA, 202:1116-1118.
- 1993 Kollias-Baker C, M Court, and L Williams, **Influence of yohimbine and tolazoline on the cardiovascular, respiratory, and sedative effects of xylazine in the horse**. J Vet Pharmacol Ther 16:350-358.

REFEREED PROCEEDINGS (full length manuscripts)

(Available on request)

BOOK CHAPTERS

- 2017 Cole C, Medication control programs in performance animals. In Veterinary Pharmacology and Therapeutics 10th eds. Eds M Papich and J Rivere. Iowa State University Press. p1439- 1447.
- 2015 Cole C, Basics of antimicrobial therapy for the horse. In Equine Pharmacology Eds C Cole, L Maxwell, B Bentz, John Wiley & Sons. p16-43.

- 2015 Cole C, Pharmacology of nonsteroidal anti-inflammatory drugs. In Equine Pharmacology Eds C Cole, L Maxwell, B Bentz, John Wiley & Sons. p76-84.
- 2015 Cole C and B Bentz. Treatment of equine nervous system disorders. In Equine Pharmacology Eds C Cole, L Maxwell, B Bentz, John Wiley & Sons. p192-217.
- 2009 Cole C and K Zintek. Regulation of Drug and Medication Use in Performance Animals In Veterinary Pharmacology and Therapeutics 9th eds. Eds M Papich and J Rivere. Iowa State University Press. p1419-1429.
- 2004 Kollias-Baker C and S Stanley. Detection of drug use in performance horses. In Equine Sports Medicine and Surgery. Eds. K Hinchcliff, R Geor, A Kaneps Elsevier Health Sciences. p1253-1266.
- 2004 Kollias-Baker, C, K Cox. Nonsteroidal Anti-inflammatory Drugs. In Equine Clinical Pharmacology. Ed. J Bertone. Harcourt Publishers. p247-265.
- 2003 Sellars, S, C Kollias-Baker. Compounding Issues for the Veterinarian. Clinical Pharmacology Section, ed C Kollias-Baker In Current Therapy in Equine Medicine 5. Ed NE Robinson. WB Saunders Co. p 29-31.
- 2003 Stanley, S, C Kollias-Baker. Drug and Medication Control Programs in Performance Horses. Clinical Pharmacology Section, ed C Kollias-Baker In Current Therapy in Equine Medicine 5. Ed NE Robinson. WB Saunders Co.
p 32-35.
- 2001 Kollias-Baker, C. Residues and considerations for use of pharmaceuticals in the performance horse. In Vet Clin North Am Equine Pract. Ed. F Galey. WB Sauders Co 17, p 433-44.
- 1999 Kollias-Baker, C. Therapeutics of musculoskeletal disease in the horse. In Vet Clin North Am Equine Pract. Ed. T Whittem. WB Sauders Co. 15, p589-602.
- 1995 Kollias-Baker, C, J Shryock, and L Belardinelli. Myocardial adenosine receptors. In Adenosine and Adenine Nucleotides: from Molecular Biology to Integrative Physiology. Eds. L Belardinelli and A Pelleg. Kluwer Academic Pub. Norwell, MA, p221-228.

ABSTRACTS

(Available upon request)

JOURNAL AND ABSTRACT AD HOC REVIEWER

(Available upon request)

COMMITTEE SERVICE

National

2017-2018- American College of Veterinary Clinical Pharmacology- President elect

2003 and 2005-	Racing Medication and Testing Consortium- Grant Review Committee
2004 and 2005-	American College of Veterinary Clinical Pharmacology- Examination Committee
2002-	Racing Commissioner's International Veterinary Pharmacology Committee

University of Florida

2003-2005	Research Committee –Chair 2005
2003-2005	Institutional Animal Care and Use Committee- Co-Chair 2005

University of California, Davis

2002	Graduate Clinical Education Committee, School of Veterinary Medicine
2000-2001	Recruitment Committees for Veterinary Nutritionist in the Department of Molecular Biosciences
1999-2000	Davis Faculty Chair- California Animal Health and Food Safety Laboratory System
1998	Recruitment Committee for Clinical Nutritionist in the Department of Molecular Biosciences
1999	Admissions Advisory Council, School of Veterinary Medicine
1995-1999	Building Committee, KL Maddy Equine Chemistry Laboratory, California Animal Health and Food Safety Laboratory System

GRANTS and TESTING CONTRACTS

Detection of the snail toxin ziconotide in equine serum. Racing Medication and Testing Consortium, Principle Investigator: C Kollias-Baker, Co-investigators: L Prokai and P Colohan. \$96,984, Aug 2005-July 2007.

Effect of fentanyl on visceral and somatic nociception in horses. Grayson Jockey Club Research Foundation. Principle Investigator: L. C Sanchez, Co-Investigators: S. Robertson and C Kollias-Baker. \$46,730 April 2004- March 2005

Determination of a reporting level for procaine. Racing Medication and Testing Consortium, Principle Investigator: C Kollias-Baker, Co-investigator: P Colohan. \$59,122, Oct 2003- Aug, 2004

Detection of nonpermitted analgesic agents administered by intra-articular injection to horses. Parimutuel Wagering Trust Fund. Principle Investigator: C Kollias-Baker, Co-investigator: P Colohan.\$ 20,185, July 2003-July 2004.

(Full list of grants available upon request)