
BIOGRAPHICAL SKETCH

NAME Angela Maria Arenas-Gamboa <hr/> eRA COMMONS USER NAME (credential, e.g., agency login) ARENASA	POSITION TITLE Assistant Professor, College of Veterinary Medicine, Texas A&M University Assistant Professor, College of Medicine, Texas A&M University Health Science Center		
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
Universidad de La Salle, Bogota, Colombia	DVM	2002	Doctor in Veterinary Medicine
Texas A&M University	PhD	2007	Veterinary Microbiology
Texas A&M University	Anatomic Pathology Resident	2007-2010	Veterinary Pathologist Anatomic
American College of Veterinary Pathology	DACVP	2010	Veterinary Pathologist Anatomic

A. Personal statement

I have more than fifteen years of research experience in the area of infectious diseases with a strong emphasis in the development of vaccines for human and animal use against brucellosis. Using molecular based approaches in combination with the use of highly innovative vaccine delivery systems known as alginate microencapsulation we have been able to develop a highly efficacious, safe and economically viable vaccine candidate for human use using small laboratory animal models. More recently, my research efforts have been also directed towards the development of Improved Diagnostic Tools for infectious disease agents that could be used under resource limited settings. I have a strong interest in “Global One Health” that is supported by continued and on-going international collaborations with countries where brucellosis is endemic including the Sub-Saharan region (Ethiopia) and Latin America (Colombia and Argentina).

B. Positions and Honors

Positions and Employment:

2002-2003 Rabies Vaccine Production Director, Laboratorios Vecol, SA, Bogotá, Colombia
 2007-2011 Assistant Research Scientist, Health Science Center, Texas A&M University, College Station, TX
 2011-Present Assistant Research Professor, Health Science Center, Texas A&M University System, Health Science Center, College Station, TX (Joint appointment)
 2015-Present Assistant Professor, Texas A&M University, College of Veterinary Medicine, Department of Veterinary Pathobiology

Other Experience and Professional Memberships

American Society of Tropical Medicine and Hygiene
 American Society of Microbiology
 American College of Veterinary Pathologists
 ACOVEZ (Asociación Colombiana de Médicos Veterinarios y Zootecnistas)

Honors

2002	Graduated with Honors as a DVM
2003	AECI Spanish award for Academic excellence
2005	Predocctoral Fellowship Award, Texas A&M University System Health Science Center
2006	Predocctoral Fellowship Award, Texas A&M University System Health Science Center
2010	CLDAVIS. Veterinary Pathology Scholarship Award. Baltimore, MD
2011	NIAID (R13). Brucellosis 2011 International Research Conference
2015	Outstanding Young Faculty Research Award, College of Veterinary Medicine, TAMU

C. Publications:

1. Patterson JL1, **Arenas-Gamboa AM**, Wang TY, Hsiao HC, Howell DW, Pellois JP, Rice-Ficht A, Bondos SE. 2015. Materials composed of the Drosophila Hox protein Ultrabithorax are biocompatible and nonimmunogenic. J Biomed Mater Res A.103(4):1546-53. PMID: PMC Journal in Process.
2. Lee KM, Chou KB, Sansing HA, Didier PJ, Ficht TA, **Arenas-Gamboa AM**, Roy CJ, Maclean AG. 2013. Aerosol-induced brucellosis increases TLR-2 expression and increased complexity in the microanatomy of astroglia in Rhesus macaques. Front Cell Infect Microbiol. 2013; 3: 86. PMID: PMC3844859
3. **A.M Arenas-Gamboa**, M.Tanabe, J. Edwards and R. Storts. 2013. Peripheral Neuroblastomas in Dogs: A Case Series. J. Comp. Path. Vol, 1-5. PMID: PMC Journal in Process
4. **Arenas-Gamboa AM**, Rice-Ficht AC, Fan Y, Kahl-McDonagh MM, Ficht TA. 2012. Extended safety and efficacy studies of the attenuated Brucella vaccine candidates 16M Δ vjbR and S19 Δ vjbR in the immunocompromised IRF-1 $^{-/-}$ Mouse model. Clin Vaccine Immunol. Feb; 19(2):249-60. PMID:PMC3272933
5. **Arenas-Gamboa, A. M.**, A. C. Rice-Ficht, M. M. Kahl-McDonagh, and T. A. Ficht. 2011. Protective efficacy and safety of *Brucella melitensis* 16MDeltamucR against intraperitoneal and aerosol challenge in BALB/c mice. Infect. Immun. 79:3653-3658. PMID: PMC 3165458
6. Ajithdoss, D. K., **A. M. Arenas-Gamboa**, and J. F. Edwards. 2011. A fibrous band associated with the non-coronary aortic valve cusp in a dog. Journal of veterinary cardiology: the official journal of the European Society of Veterinary Cardiology 13:127-129. PMID: PMC Journal in Process.
7. **Arenas-Gamboa, A. M.**, J. J. Bearss, G. B. Hubbard, B. F. Porter, M. A. Owston, and E. J. Dick, Jr. 2011. Sclerosing cholangitis in baboons (*Papio spp*) resembling primary sclerosing cholangitis of humans. Vet. Pathol. ePub ahead of print. PMID: PMC Journal in Process.
8. **Arenas-Gamboa, A. M.**, and J. Mansell. 2011. Epithelioid haemangiosarcoma in the ocular tissue of horses. J. Comp. Pathol. 144:328-333. PMID: PMC Journal in Process.
9. Rice-Ficht, A. C., **A. M. Arenas-Gamboa**, M. M. Kahl-McDonagh, and T. A. Ficht. 2010. Polymeric particles in vaccine delivery. Curr. Opin. Microbiol. 13:106-112. PMID: PMC Journal in Process.
10. **Arenas-Gamboa AM**, Ficht TA, Davis DS, Elzer PH, Kahl-McDonagh M, Wong-Gonzalez A, et al. Oral vaccination with microencapsulated strain 19 vaccine confers enhanced protection against *Brucella abortus* strain 2308 challenge in red deer (*Cervus elaphus elaphus*). J Wildl Dis. 2009;45 (4):1021-9. PMID: PMC Journal in Process.
11. Ficht TA, Kahl-McDonagh MM, **Arenas-Gamboa AM**, Rice-Ficht AC. Brucellosis: the case for live,

attenuated vaccines. *Vaccine*. 2009; 27 Suppl 4:D40-3. PMID: PMC2780424.

12. **Arenas-Gamboa AM**, Ficht TA, Davis DS, Elzer PH, Wong-Gonzalez A, Rice-Ficht AC. Enhanced immune response of red deer (*Cervus elaphus*) to live rb51 vaccine strain using composite microspheres. *J Wildl Dis*. 2009; 45(1):165-73. PMID: PMC3350799
13. **Arenas-Gamboa AM**, Ficht TA, Kahl-McDonagh MM, Gomez G, Rice-Ficht AC. The *Brucella abortus* S19 DeltavjbR live vaccine candidate is safer than S19 and confers protection against wild-type challenge in BALB/c mice when delivered in a sustained-release vehicle. *Infect Immun*. 2009;77(2):877-84. PMID: PMC2632017.
14. **Arenas-Gamboa AM**, Ficht TA, Kahl-McDonagh MM, Rice-Ficht AC. Immunization with a single dose of a microencapsulated *Brucella melitensis* mutant enhances protection against wild-type challenge. *Infect Immun*. 2008;76(6):2448-55. PMID: PMC2423109.
15. Kahl-McDonagh MM, **Arenas-Gamboa AM**, Ficht TA. Aerosol infection of BALB/c mice with *Brucella melitensis* and *Brucella abortus* and protective efficacy against aerosol challenge. *Infect Immun*. 2007;75(10):4923-32. PMID: PMC2044518.
16. **Angela M Arenas-Gamboa**. Evaluation of microencapsulation as an improved vaccination strategy against brucellosis. Dissertation. May 2007.

D. Research Support

Ongoing Research support

BAA 15DHS-001 DHS- Agrodefense Facility Transition Research Project Grant: From the Bench to the Shop: Creation and Implementation of a Scientific Business Development and Management Program to Transition High Consequence Livestock Disease Research and Development Technologies for Commercialization Total amount: \$1'309.553.	Arenas (PI)	9/24/2015 – 9/24/2018
CHF Grant 02175-A Canine Health Foundation Grant title: Development of a brucellosis vaccine for dogs Total amount: \$12,952	Arenas (PI)	10/01/2015 – 9/30/2016
590158 USDA Formula Animal Health Grant title: Development of a brucellosis vaccine for domestic and feral swine Goal: The major goal of this study is the development of <i>Brucella</i> vaccines that are safe, stable, and efficacious against the multiple pathogenic <i>Brucella</i> species Total amount: \$40,000	Arenas (PI)	21/1/2014 – 9/13/2016
1R21AI107035-01A1 National Institutes of Health NIH (R21) Grant Title: The use of the pregnant sheep model in vaccine safety studies against Brucellosis Goal: Provide the support for experimentation to test vaccine candidates in nonhuman primates with the ultimate goal of developing a <i>Brucella</i> vaccine that is safe and efficacious for human use. Total amount: \$401,500	Arenas (PI)	09/01/2014 – 08/31/2016

1 K01 TW009981-01 Arenas (PI) 12/01/2014 - 11/30/2019
International research scientist development award (IRSDA/K01). National Institutes of Health (NIH)
Grant title: Use of the goat model to test human *Brucella* vaccines in Argentina
Goal: The goal of the proposed research is the development of vaccines against *Brucella* infection that are safe and efficacious. Our general approach has focused on the use of live attenuated vaccines (LAV).
Total amount: \$670,383

402896/2013-0 Bertolini (PI) 12/1/2013 – 12/1/2016
Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq/Brasil), Ministry of Science and Technology, Brasil
Grant title: Production of recombinant immunogenic proteins in the milk of genetically engineered animals for development of a vaccine against *Brucella abortus*.
Goal: Development of a subunit vaccine for brucellosis produced in milk
Total amount: \$300,000

Gates Foundation Long (PI) 01/03/2014 – 01/03/2016
Grant title: Single dose, multivalent vaccine for zoonotic diseases
Goal: Development of a recombinant vaccine for multiple pathogens in milk to be used under resource-limited settings
Total amount: \$100,000

CAPES-TAMU DeFigueiredo (PI) 4/01/2014 – 4/01/2016
Grant title: *Brucella spp.* neuropathogenesis and vaccine development
Goal: Development of a vaccine against *Brucella abortus* expressed in milk
Total amount: \$100,000

Pending

National Institutes of Health, RO1 Arenas (PI) 01/01/2016– 12/31/2021
Grant title: Nature and Extend of Brucellosis in Ethiopia
Goal: determine the incidence of brucellosis in humans and in food animal production systems of Ethiopia using a more sensible and specific approach to develop an intervention strategy designed to reduce human infection
Total amount: \$2'924,000

DHH-S National Institutes of Health Ficht (PI) 7/01/2015 – 6/30/2020
Grant title: Dual purpose and dual benefit evaluation of *Brucella* vaccines in the pregnant ruminant
Total amount: \$562,478

DOD-Defense Threat Reduction Agency Allison (PI) 10/01/2015 – 9/30/2018
Grant title: Nanoparticle adjuvants for improved immunity against a Venezuelan equine encephalitis virus DNA vaccine
Total amount: \$195,670

USDA Arenas (PI) 01/01/2016 – 12/31/2017
Animal Health and Disease A1221
Grant title: Protective efficacy and safety studies in pregnant cattle of a novel vaccine against brucellosis
Goal: Test the efficacy of a novel vaccine candidate in the most relevant natural host
Total amount: \$499,993

Research Support Completed During the Last Three Years

CVM/TAMU. Faculty international Travel Grant Establishment of collaborative research in canine brucellosis in Colombia Role: PI	Arenas (PI)	09/01/2013 - 12/01/2013
W81XWH-07-1-304 USAMRMC Microencapsulation and Vaccine Delivery Research Goal: Development of a novel microencapsulated vaccine formulations	Allison Ficht (PI)	6/30/2011 – 12/1/2014
RADI CSI USAMRMC Microencapsulation and Vaccine Delivery Research Role: Post-doc Research Associate	Rice-Ficht (PI)	07/1/2011-12/31/2013
NIH/NIAID 1U54AI057156-0100 Region IV Center of Excellence for Biodefense and Emerging Infectious. Development of a live attenuated <i>Brucella</i> vaccine Role: Post-doc Research Associate	Ficht (PI)	03/01/2009-02/28/14