
BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person.

NAME: Sharon Witonsky

eRA COMMONS USER NAME (credential, e.g., agency login):
LEAVE BLANK IF YOU DO NOT HAVE A eRA COMMONS USER NAME switonsk

POSITION TITLE: Associate Professor

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Earlham College, Richmond IN	BA	06/85	Biology and Chemistry
University of Minnesota, St. Paul, MN	DVM	06/93	Doctor of Veterinary Medicine
University of Tennessee, Knoxville, TN	LA	06/97	Internship LA med & surgery
University of Tennessee, TN	internship	8/97	
University of Tennessee, TN	PhD	07/00	Immunology
(Knoxville 8/97-07/99; 1/00-7/00; St. Jude Children's Hospital, Memphis, TN: 07/99- 12/99)	LA medicine residency		07/00
	Post- doctorate		Immunology

A. Personal Statement

40% effort on the project: As a board-certified internal medicine specialist with my background and research training in immunology and infectious disease, I have the ability to address research questions from clinical issues to basic research. My research current research interests include predominantly EPM and *Brucella*. The project was my idea, and I have recruited colleagues as collaborators to complete the goal. have been extensively involved in the development and preparation of this proposal. I will be heavily involved in the acquisition and testing of horses for the study. I will review all data, manuscripts and future grant submissions.

B. Positions and Honors

1997-2000 Post-doctorate Fellow (funded through NIEHS T32ES007285 to D. Slauson),
Advisors: Dr. J. Erby Wilkinson, College of Veterinary Medicine, University of
Tennessee, Knoxville, TN and Dr. Peter Doherty (07/99-12/99) St. Jude Children's
Hospital, Memphis, TN
2000-2006 Assistant Professor, Large Animal Clinical Sciences, Virginia Maryland
Regional College of Veterinary Medicine, Virginia Tech, Blacksburg, VA

2006-present Associate Professor, Large Animal Clinical Sciences, Virginia Maryland Regional College of Veterinary Medicine, Virginia Tech, Blacksburg, VA

Other Experience and Professional Memberships (select)

2004-2008, 2009-2013: 2016- (co-chair) Residency Training Committee, ACVIM, Chair (2006-07, 2011-12)

2007- present: Board, EPM Society; 2012-present: Vice President, 2019-current: President

2003-present: Member, American College of Veterinary Internal Medicine

Honors (select):

1989 Phi Beta Kappa

2003 Diplomate American College of Veterinary Internal Medicine

2006 Pfizer Research Award for Research Excellence'

C. Contribution to Science

For each contribution, indicate the historical background that frames the scientific problem; the central finding(s); the influence of the finding(s) on the progress of science or the application of those finding(s) to health or technology; and your specific role in the described work. For each of these contributions, reference up to four peer-reviewed publications that are relevant.

Both the protective immune response to *S. neurona* infection as well as the pathology leading to EPM are poorly understood. The 1st 3 contributions focus on EPM.

1. EPM: Determination of the role of CD8 cells and IFN- γ in immunity against *S. neurona* in a mouse model. I have used mouse models to determine the protective CD4 CD8 IFN- γ immune response against *S. neurona* infection.

Witonsky S., Gogal R., Duncan R., Lindsay D. 2003. Protective immune response to *S. neurona* infection in C57BL/6 mice. *Journal of Parasitology* 89: 924-31.

Witonsky S., Gogal R., Duncan R., Lindsay D. 2003. Immunopathologic effects associated with *Sarcocystis neurona* infected interferon-gamma knock-out mice. *Journal of Parasitology* 89: 932-40.

Witonsky S., Gogal R. Jr., Duncan R. Jr., Norton H., Ward D., Lindsay D. 2005. Prevention of meningo/encephalomyelitis due to *S. neurona* infected in mice is mediated by CD8 cells. *Int J Paras* 35: 113-123.

Hay AN¹, Witonsky SG², Lindsay DS³, LeRoith T³, Zhu J¹, Kasmark L¹, Leeth CM¹. 2019.

Sarcocystis neurona-Induced Myeloencephalitis Relapse Following Anticoccidial Treatment. *J Parasitol.* 105(2):371-378.

2. EPM: I have determined the ability of equine leukocytes to be infected with *S. neurona*. We have determine that equine leukocytes can be infected in vitro. Monocytes and then B-cells have highest levels at 1 hr, with CD8 also having high levels of infection by 24 hrs.

Lindsay D, Mitchell S, Yang J, Dubey J, Gogal R, **Witonsky S.** 2006. Penetration of equine leukocytes by merozoites of *Sarcocystis neurona*. *Veterinary Parasitology* 138: 371-76.

B. Heid, S. Ellison, D. Lindsay, N. Surendran, M. Makris, S. Werre, **S Witonsky.** *S. neurona* merozoites preferentially infect monocytes in cultures of equine leukocytes. In revision *Journal of Parasitology*

3. EPM: We have identified some naturally and experimentally *S. neurona* infected horses have decreased proliferation responses to mitogen combination (PMA/I). Our recent data suggests antigen presenting cell function is also affected. I was recognized by my peers for my contributions by being asked to be an author on the EPM consensus statement 2016.

Yang J.,* Ellison S., Gogal R., Jr., Norton H., Ward D., Lindsay D., **Witonsky S.** 2006. Investigation of immune response to *Sarcocystis neurona* infection in naturally infected horses with EPM. *Vet Parasitology* 138: 200-10.

Witonsky S., Ellison S, Yang J., Gogal R., Lawler H., Sriranganathan N., Andrews F., Lindsay D. 2008. Horses experimentally infected with *S. neurona* develop altered immune responses *in vitro*. *J Parasitology* 94:1047-54.

Yang J.,* Ellison S., Gogal R., Jr., Norton H., Ward D., Lindsay D., **Witonsky S.** 2006. Investigation of immune response to *S. neurona* infection in naturally infected horses with EPM. *Veterinary Parasitology* 138: 200-10.

Lewis S., Ellison S., Dascanio J., Lindsay D., Gogal R., Werre S., Surendran N., Breen M., Heid B., Andrews F., Buechner-Maxwell V., **Witonsky S.**, 2014. Effects of Experimental *Sarcocystis neurona*-Induced Infection on Immunity in an Equine Model. *Journal of Veterinary Medicine*. <http://dx.doi.org/10.1155/2014/239495>

4. ***Brucella*: I developed a respiratory vaccination and challenge model for *Brucella abortus* to assess protection to current strains as well as pathology associated with infection of pathogenic smooth strain *B. abortus* 2308. We have determined the ability of rough vaccine strains to upregulate innate immunity *in vitro* and *in vivo*, as well as the role of TLRs in clearance and protection.**

Surendran N, Zimmerman K, Seleem M, Sriranganathan N, Boyle S, Hiltbold E, Lawler H, Heid B, **Witonsky S.** 2010. Ability of *Brucella abortus* rough vaccine strains to elicit DC and innate immunity in lung using a murine respiratory model. *Vaccine* 28: 7009-7015. PMID: 20727395.

Surendran N., Sriranganathan N., Boyle S., Hiltbold B., Heid B., Zimmerman K., **Witonsky S.** 2011. Efficacy of vaccination strategies against IN challenge with *B. abortus* in BALB/c mice. *Vaccine* 29: 2749-55.

Surendran N., Hiltbold B., Heid B., Akira S, Standiford TJ, Sriranganathan N., Boyle S., Zimmerman K., Makris MR, **Witonsky S.**, 2012. Role of TLRs in *Brucella* mediated murine DC activation *in vitro* and clearance of pulmonary infection *in vivo*. *Vaccine* 30: 1502-12.

Surendran N, Sriranganathan N, Boyle S, Hiltbold E, Tenpenny N, Walker M, Zimmerman K, Werre S, **Witonsky S.** 2013. Protection to respiratory challenge of *B. abortus* strain 2308 in the lung. *Vaccine* 28: 4103-10.

[Complete list and more recent published works in MyBibliography:
https://www.ncbi.nlm.nih.gov/pubmed/?term=Witonsky+S%5BAuthor%5D](https://www.ncbi.nlm.nih.gov/pubmed/?term=Witonsky+S%5BAuthor%5D)

