

**Curriculum Vitae**  
**Cathy L. Miller, Ph.D.**

**Address**

Department of Microbiology and Preventive Medicine  
College of Veterinary Medicine, Iowa State University  
Veterinary Medical Research Institute, Building 3  
1802 University Boulevard  
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**Education and Professional Positions**

- Associate Professor 2012-present  
Department of Microbiology and Preventive Medicine  
College of Veterinary Medicine  
Iowa State University  
Ames, Iowa
- Assistant Professor 2006-2012  
Department of Microbiology and Preventive Medicine  
College of Veterinary Medicine  
Iowa State University  
Ames, Iowa
- Postdoctoral Fellow 2001-2005  
Department of Microbiology and Molecular Genetics  
Max Nibert Laboratory  
Harvard Medical School  
Boston, Massachusetts
- Ph.D., Molecular Microbiology 1994-2001  
Department of Molecular Microbiology and Immunology  
David Pintel Laboratory  
University of Missouri-Columbia School of Medicine  
Columbia, Missouri
- B.A. Microbiology 1988-1993  
University of Missouri-Columbia  
Columbia, Missouri

**Teaching Experience**

- Co-Instructor and Designer 2016-present  
BMS Masters Microbiology/Virology Section  
Iowa State University
- Instructor 2013  
Interdepartmental Microbiology Seminar  
Iowa State University

- Guest Lecturer  
Micro Senior Survey  
Iowa State University 2012, 2013
- Co-instructor  
Case Studies IV/Professional Students  
Iowa State University 2010
- Instructor  
Cell Biology/Graduate Level  
Iowa State University 2007
- Guest Lecturer  
Virology/Undergraduate Level  
Iowa State University 2007-present
- Guest Lecturer  
Immunology/Graduate Level  
Iowa State University 2012, 2015
- Co-instructor and Designer  
Molecular Virology/Graduate Level  
Iowa State University 2007-present
- Virology Laboratory Instructor  
Program in Medical Education  
Immunology, Microbiology, and Infectious Disease Course  
Harvard Medical School 2003
- Supervision of undergraduate and  
graduate rotation students and projects 1997-2005
- Teaching Assistant, Problem Based Learning  
Microbiology Medical Student Block  
University of Missouri-Columbia School of Medicine 1997
- Teaching Assistant, Medical and Nursing Microbiology  
University of Missouri-Columbia School of Medicine 1995-1997

### **Leadership**

- Associate Chair, Interdepartmental Microbiology Program 2010-2012
- Chair and Director of Graduate Education,  
Interdepartmental Microbiology Program 2012-2014

### **Awards**

- CVM Mid-Career Achievement in Research Award, ISU 2015
- K22, NIH, NIAID Career Development Award  
Cathy Miller, Principal Investigator 2006-2008
- Postdoctoral Fellow, NIH, NIAID  
Ruth Kirchstein Individual NRSA Training Grant  
Cathy Miller, Principal Investigator 2003-2005
- American Society for Virology Travel Award  
22<sup>nd</sup> Annual Meeting, July 12-16  
University of California-Davis 2003
- Postdoctoral Fellow, NIH, NIAID 2002-2003

- Institutional NRSA Training Grant  
 Infectious Disease and Basic Microbiological Mechanisms  
 Harvard Medical School
- Ernst Postdoctoral Fellow 2001-2002  
 Harvard Medical School
  - VIII International Parvovirus Workshop Travel Award 2000
  - Pre-doctoral Fellow, NIH, NIAID 1995-1999  
 Institutional NRSA Training Grant  
 Department of Molecular Microbiology and Immunology  
 University of Missouri-Columbia School of Medicine
  - University of Missouri Molecular Biology Program Travel Award 1999
  - Donald K. Anderson Teaching Award 1995-1996  
 University of Missouri-Columbia

### **Interdepartmental Program Member**

- Interdepartmental Microbiology 2006-present
- Molecular, Cellular, and Developmental Biology 2006-present
- Interdepartmental Genetics 2009-present
- Immunobiology 2010-present

### **Professional Societies**

- American Society of Virology 2001-present  
 Associate Member American Association for the Advancement of Science 2005-2010  
 American Society of Microbiology 2008-present

### **Selected Publications**

#### **Manuscripts-In preparation**

1. Guo, B., Lager, K., and **Miller, C. L.\*** Mapping sequence requirements for packaging of Mammalian orthoreovirus gene segment S1. In preparation.
2. Gupta, P., Bussiere, L., Meseke, T., and **Miller, C. L.\*** Mammalian orthoreovirus proteins  $\mu 1$  and  $\mu 2$  induce downregulation of HIF-1 $\alpha$  in hypoxic prostate tumor cells. In preparation.
3. Bussiere, L., Choudhury, P., and **Miller, C. L.\*** Biarsenical labeling of a virus non-structural protein demonstrates reovirus factory dynamics in infected cells. In preparation.
4. Choudhury, P., and **Miller, C. L.\*** Mammalian orthoreovirus modulation of stress granules occurs via interaction with G3BP1 and Caprin-1. In preparation.

#### **Manuscripts-Submitted**

1. Hines, N. Killian, MS, and Miller, C. L. Universal Primers for Pathotype Determination of Avian Paramyxovirus Type-1 Isolates. Submitted to Journal of Virological Methods Aug. 2015.

### Manuscripts-Published

1. Hernandez, L. A., Miller, C. L., and Vaughn, E. M. 2016. Particle and subunit-based hemagglutinin vaccines provide protective efficacy against H1N1 influenza in pigs. *Veterinary Microbiology*.
2. Gupta, P., Meseke, T., and **Miller, C. L.\*** 2015 Downregulation of key regulatory proteins in androgen dependent prostate tumor cells by oncolytic reovirus. *Virology*, 485:153-161. PMID: 26264969.
3. Kappes, M. A., **Miller, C. L.**, and Faaberg, K. S. 2015. Porcine reproductive and respiratory syndrome virus nonstructural protein 2 (nsp2) topology and selective isoform integration in artificial membranes. *Virology*, 481, 51–62. PMID: 25768891.
4. Ikoba, U., Li, H., Peng, H., **Miller, C.**, Yu, C., Wang, Q. 2015. Nanocarriers in Therapy of Infectious and Inflammatory Diseases. *Nanoscale*, 25;7(10):4291-4305. PMID: 25680099.
5. Gupta-Saraf, P. and **Miller, C. L.\*** 2014. HIF-1 $\alpha$  downregulation and apoptosis in hypoxic prostate tumor cells infected with oncolytic Mammalian orthoreovirus. *Oncotarget*, 5(1.2), 561-574. PMID: 24504474.
6. Buehler, J., Lager, K., Vincent, A., **Miller, C.**, Thacker, E., and Jahnke, B. 2014. Issues encountered in development of an ELISA for use in detecting H5N1 exposure in swine. *Journal of Veterinary Diagnostic Investigation*, 26(2):277-81. PMID: 24464555.
7. Carroll, K., Hastings, C., and **Miller, C. L.\*** 2014. Amino-acids 78 and 79 of mammalian orthoreovirus protein  $\mu$ NS are necessary for stress granule localization, core protein  $\lambda$ 2 interaction, and de novo virus replication. *Virology*, 448: 133-145. PMID: 24314644.
8. Kappes, M., **Miller, C. L.**, and Faaberg, K. 2013. Highly Divergent Strains of Porcine Reproductive And Respiratory Syndrome Virus Incorporate Multiple Isoforms of Nonstructural Protein 2 into Virions. *Journal of Virology* 87:24 13456-13465. PMID: 24089566.
9. Buehler, J. Navi, D., Lorusso, A., Vincent, A., Lager, K., and **Miller, C.L.\*** 2013. Influenza A virus PB1-F2 protein expression is regulated in a strain-specific manner by sequences located downstream of the PB1-F2 initiation codon *Journal of Virology*, 87(19):10687-99. PMID: 23885074.
10. Chen, Q., Madsen, D., **Miller, C. L.**, and Harris, H. 2012. Vaccine Development for Protecting Swine Against Influenza Virus. *Animal Health Research Reviews*, 13(2); 181-195. PMID: 23253165.

11. Hines, N., Killian, M., Pedersen, J., Reising, M. Mosos, N., Mathieu-Benson, C., and **Miller, C. L.\*** 2012. An rRT-PCR Assay to Detect the Matrix Gene of a Broad Range of Avian Paramyxovirus Serotype-1. *Avian Diseases*, 56(2):387-95. PMID: 22856199.
12. Hines, N., and **Miller, C. L.\*** 2012. Avian Paramyxovirus Serotype-1: A Review of Disease Distribution, Clinical Symptoms and Laboratory Diagnostics. *Veterinary Medicine International*, 2012;2012:708216. PMID: 22577610.
13. **Miller, C. L.\*** 2011. Stress granules and viral replication. *Future Virology* 6: 11, 1329-1338. *Invited, peer reviewed review.*
14. Qin, Q., Carroll, K., Hastings, C., and **Miller, C. L.\*** 2011. Mammalian Orthoreovirus escape from host translational shutoff correlates with stress granule disruption and is independent of eIF2 $\alpha$  phosphorylation and PKR. *Journal of Virology* 85:17, 8798-8810. PMID: 21715487.
15. Firth, A. E., B. J. Blitvich, N. M. Wills, **C. L. Miller**, J. F. Atkins. 2010. Evidence for ribosomal frameshifting and a novel overlapping gene in the genomes of insect specific flaviviruses. *Virology* 30;399(1):153-66. PMID: 20097399.
16. Li, G, Y. Feng,, S. Kariyawasam, K. A. Tivendale, Y. Wannemuehler, F. Zhou, **C. L. Miller**, C. M. Logue, and L. K. Nolan. 2010. AatA is a novel autotransporter and virulence factor of avian pathogenic *Escherichia coli*. *Infection and Immunity*, 78.3: 898-906.
17. **Miller, C.L\*.**, Arnold, M.M., Broering, T. J., Hastings, C. E., and Nibert M. L. 2010. Localization of mammalian orthoreovirus proteins to cytoplasmic factory-like structures via nonoverlapping regions of  $\mu$ NS. *Journal of Virology*. 84:2, 867-882. *Co-corresponding author.*
18. Qin, Q., Hastings, C. E. and **Miller, C. L.\*** 2009. Mammalian orthoreovirus particles induce and are recruited into stress granules at early times post infection *Journal of Virology* 83:21, 11090-11101.
19. **Miller, C.L\*.**, Arnold, M. M., Broering, T. J., Eichwald, C., Kim, J., Dinoso, J. B., and Nibert, M. L. 2007. Virus-derived platforms for visualizing protein associations inside cells. *Molecular and Cellular Proteomics* 6 (6); 1027-1038. *Co-corresponding author, Cover Illustration*
20. Broering, T. J., Arnold, M. M., **Miller, C. L.**, Hurt, J. A., Joyce, P. L., and Nibert, M. L. 2005 Carboxyl-proximal regions of reovirus nonstructural protein  $\mu$ NS necessary and sufficient for forming factory-like inclusions. *Journal of Virology* 79(10):6194-6206.
21. Helander, A., **Miller, C. L.**, Myers, K. S., Neutra, M. and Nibert, M. 2004. Protective

immunoglobulin A (IgA) and IgG antibodies bind to overlapping intersubunit epitopes in the head domain of type 1 reovirus adhesin  $\sigma 1$ . *Journal of Virology* 78(19): 10695-10705.

22. **Miller, C. L.**, Parker, J.S.L., Dinoso, J. B., Piggott, C., Perron, M. J. and Nibert, M.L. 2004. Increased ubiquitination and other covariant phenotypes attributed to a strain- and temperature-dependent defect of reovirus core protein  $\mu 2$ . *Journal of Virology* 78(19): 10291-10302.
23. Broering, T. J., Kim, J., **Miller, C. L.**, Piggott, C., Dinoso, J., Nibert, M., and Parker, J. S. L. 2004. Reovirus nonstructural protein  $\mu$ NS recruits viral core surface proteins and entering core particles to factory-like inclusions. *Journal of Virology*. 78(4): 1882-1892.
24. **Miller, C. L.**, Broering, T. J., Parker, J. S. L., Arnold, M. M., and Nibert, M. L. 2003. Reovirus  $\sigma$ NS protein localizes to inclusions through an association requiring the N-terminus of  $\mu$ NS. *Journal of Virology* 77(8): 4566-4576. *Cover Illustration*.
25. **Miller, C. L.**, and Pintel, D. 2002. Interaction between Parvovirus NS2 protein and nuclear export factor Crm1 is important for viral egress from the nucleus of murine cells. *Journal of Virology* 76(7): 3257-3266.
26. **Miller, C. L.**, and Pintel, D. 2001. The NS2 protein generated by the parvovirus minute virus of mice (MVM) is degraded by the proteasome in a manner independent of ubiquitin chain elongation or activation. *Virology* 285: 346-255.
27. Eisenstark, A., Yallaly, P., Ivanova, A., and **Miller, C.** 1995. Genetic mechanisms involved in cellular recovery from oxidative stress. *Arch. Insect. Biochem. Physiol.* 29(2):159-173.
28. Eisenstark, A., **Miller, C.**, Jones, J., and Leven, S. 1995. *Escherichia coli* genes involved in cell survival during dormancy: role of oxidative stress. *Biochem. Biophys. Res. Commun.* 188(3):1054-1059.
29. Eisenstark, A., Ivanova, A., and **Miller, C.** 1995. Genes involved in cellular recovery from near-ultraviolet oxidation; new role for regulation of catalases by *rpoS* (*katF*;  $\sigma^{38}$ ) gene in *Escherichia coli*. In *The Oxygen Paradox*. Kelvin J.A. Davies and Fulvio Ursini, editors. Cleup University Press, Padova, Italy, pp. 571-587.
30. Ivanova, A., **Miller, C.**, Glinsky, G, and Eisenstark, A. 1994. Role of *rpoS* (*katF*) in *oxyR* independent regulation of hydroperoxidase 1 in *Escherichia coli*. *Mol. Microbiol.* 12(4):571-578.

\* *Corresponding author*

**Abstracts, Refereed**

1. Bussiere, L., Gupta-Saraf, P., Meseke, T., and **Miller, C. L.** 2016. Investigation into the role of Mammalian Orthoreovirus proteins in modulation of the hypoxic response in prostate cancer. American Society for Virology Meeting, June 18-22, Blacksburg, VA. Oral Presentation.
2. Choudhury, P., and **Miller, C. L.** 2016. Investigation into a Role for G3BP/Caprin-1 in Mammalian Orthoreovirus Stress Granule Modulation. American Society for Virology Meeting, June 18-22, Blacksburg VA. Oral Presentation.
3. Hoang H, Madson D, Derscheid R, **Miller C**, Groeltz-Thrush J, Sun D, and Yoon K-J. 2016. Development of murine monoclonal antibodies for porcine rotavirus group B and C and use in immunoassays. Proceedings, International Pig Veterinary Society Congress, Abstract # PO-PF3-161.
4. Choudhury, P., Guo, B., Lager, K., Cho, M., and **Miller, C.**, 2015. Strategies for high-level antigen expression from a Mammalian Orthoreovirus vector. Vaccines Against Antigenically Variant Viruses Symposium, Nov. 5-8, Ames, IA. Poster presentation. *Best Poster Award (1 of 6)*.
5. Carroll, K., and **Miller, C. L.** 2013. Investigation of mammalian orthoreovirus escap from host translational shutoff. The 32nd American Society for Virology Meeting, July 20-24, University Park, PA. Oral presentation.
6. Gupta, P., and **Miller, C. L.** 2013. Mammalian Orthoreovirus infection of hypoxic prostate tumor cells induces downregulation of HIF-1 $\alpha$  and apoptotic tumor cell death. 7th Int'l Meeting on Replicating Oncolytic Virus Therapeutics. June 15-18, Quebec City, Quebec, Canada. Oral and poster presentations.
7. Gupta, P., Darling, R., and **Miller, C.** 2012. Mammalian orthoreovirus induces apoptosis in hypoxic prostate tumor cells and downregulates HIF-1 $\alpha$  via RACK1-mediated proteasomal degradation and translational inhibition. Twelfth Annual Symposium in Virology, Oct. 5, 2012, Lincoln, NE. Poster presentation
8. Carroll, K., and **Miller, C.** 2012. Investigation of the role of mammalian orthoreovirus protein  $\mu$ NS in stress granule modulation. The 31<sup>st</sup> American Society for Virology Meeting, July 21-25, Madison, WI. Oral presentation.
9. Gupta, P., Darling, R., and **Miller, C.** 2012. Mammalian orthoreovirus induces apoptosis in hypoxic prostate tumor cells and downregulates HIF-1 $\alpha$  via RACK1-mediated proteasomal degradation and translational inhibition. The 31<sup>st</sup> American Society for Virology Meeting, July 21-25, Madison, WI. Oral presentation.
10. Buehler, J., Navi, D., Vincent, A., Lorusso, A., Lager, K., and **Miller, C.** 2012. Elucidating the role of virus lineage and RNA sequence in translational regulation of influenza virus PB1-F2. The 31<sup>st</sup> American Society for Virology Meeting, July 21-25, Madison, WI. Poster presentation.
11. Gupta, P., and **Miller, C. L.** 2012. Mammalian Orthoreovirus downregulates HIF-1 $\alpha$  in hypoxic prostate tumor cells via RACK1-mediated proteasomal degradation and translational inhibition. 2012 American Association for Cancer Research Annual

Meeting. Mar 31-Apr 4, Chicago, IL. Poster Presentation. *Selected as a Late Breaking Abstract.*

12. Gupta, P. and **Miller, C. L.** 2011. Investigation of the impact of mammalian orthoreovirus infection on hypoxic cancer cells. The 11<sup>th</sup> Annual Symposium in Virology, University of Nebraska-Lincoln, Lincoln, NE. Poster Presentation.
13. Buehler, J. McCullough, D., Kohns, C., Loving, C., Lorusso, A., Vincent, A., Lager, K., and **Miller, C.** 2011. Characterization of swine influenza virus PB1-F2 properties in swine and human cells. The 11<sup>th</sup> Annual Symposium in Virology, University of Nebraska-Lincoln, Lincoln, NE. Poster Presentation.
14. Baoqing, G., Hamelin, L., and **Miller, C. L.** 2011. Development of a Universal Oral Mammalian Orthoreovirus Vected Vaccine for Infectious Diseases in Animals. 71<sup>st</sup> Annual North Central Branch of the American Society for Microbiology Meeting, Oct. 7-8, Des Moines, IA. Poster Presentation.
15. Gupta, P. and **Miller, C. L.** 2011. Investigation of the impact of mammalian orthoreovirus infection on hypoxic cancer cells. 71<sup>st</sup> Annual North Central Branch of the American Society for Microbiology Meeting, Oct. 7-8, Des Moines, IA. Oral Presentation.
16. Buehler, J. McCullough, D., Kohns, C., Loving, C., Lorusso, A., Vincent, A., Lager, K., and **Miller, C.** 2011. Characterization of swine influenza virus PB1-F2 properties in swine and human cells. 71<sup>st</sup> Annual North Central Branch of the American Society for Microbiology Meeting, Oct. 7-8, Des Moines, IA. Oral Presentation.
17. Hamelin, L. Baoqing, G., and **Miller, C. L.** 2011. Development of a Universal Oral Mammalian Orthoreovirus Vected Vaccine for Infectious Diseases in Animals. 11<sup>th</sup> Annual Meril-NIH National Veterinary Scholars Symposium. Orlando, Fl. August 4-6. Poster Presentation.
18. Gupta, P. and **Miller, C. L.** 2011. Investigation of the impact of mammalian orthoreovirus infection on hypoxic cancer cells. The 30<sup>th</sup> American Society for Virology Meeting, July 16-20, Minneapolis, MN. Oral Presentation.
19. Buehler, J. McCullough, D., Kohns, C., Loving, C., Lorusso, A., Vincent, A., Lager, K., and **Miller, C.** 2011. Characterization of swine influenza virus PB1-F2 properties in swine and human cells. The 30<sup>th</sup> American Society for Virology Meeting, July 16-20, Minneapolis, MN. Oral Presentation.
20. Blitvich BJ, Firth AE, Wills NM, **Miller CL**, Brault AC, Atkins JF. Evidence for -1 ribosomal frameshifting and a novel overlapping gene in the genomes of insect-specific flaviviruses. November 2010. The 59<sup>th</sup> Annual Meeting of the American Society of Tropical Medicine and Hygiene, Atlanta, GA. *Oral Presentation*
21. Qin, Q., Hastings, C., and **Miller, C.** 2010. Disruption of Stress Granules is Important for Mammalian Orthoreovirus Escape from Host Translational Shutoff. RNA in Motion Symposium, Sept. 9-12, Ames, IA. Poster presentation.



22. Miller, A. G., Gupta, P., and **Miller, C.** 2010. Investigation of the impact of mammalian orthoreovirus infection on hypoxic tumor cells. 10<sup>th</sup> Annual Merit-NIH National Veterinary Scholars Symposium. Athens, GA, August 5-8. Poster Presentation. Poster Award, 1 of 6 from 87 posters.
23. Cutler TD, Hoff SJ, Wang C, Warren KJ, Zhou F, Qin Q, **Miller C**, Ridpath JF, Yoon K-J, Zimmerman J. September 2010. Inactivación de agents patógenos virales seleccionados mediante luz ultravioleta (UV254). XXII Congreso Panamericano de Ciencias Veterinarias. Lima, Peru.
24. Qin Q., Gupta, P, Hastings, C., and **Miller, C. L.** 2010. Mammalian orthoreovirus translation is refractory to phosphorylation of eIF2 $\alpha$  caused by oxidative stress or hypoxia. American Society for Virology 29<sup>th</sup> Annual Meeting, Montana State University, Bozeman, MT, July 17-21. Oral Presentation.
25. Buehler, J., McCullough, D., Loving, C., Vincent, A., Lager, K., and **Miller, C.** 2010. Investigation of the function of the influenza A virus PB1-F2 protein during infection of swine and human cells with a predominant circulating strain. American Society for Virology 29<sup>th</sup> Annual Meeting, Montana State University, Bozeman, MT, July 17-21 Poster Presentation.
26. Qin, Q., Hastings, C., and **Miller, C.** 2010. Disruption of Stress Granules is Important for Mammalian Orthoreovirus Escape from Host Translational Shutoff. Keystone Symposium on Cell Biology of Virus Entry, Replication, and Pathogenesis. Feb. 17-21, Taos, NM. Poster presentation
27. Cutler T, Hoff S, Wang C, Warren K, Zhou F, Qin Q, **Miller C**, Ridpath J, Yoon K-J, Zimmerman J. October 2009. UV254 Inactivation of Selected Viral Pathogens. 52<sup>nd</sup> Annual Conference, American Association of Veterinary Laboratory Diagnosticians. San Diego, California, p. 124. Oral presentation.
28. Cutler TD, Hoff SJ, Wang C, Warren KJ, Zhou F, Qin Q, Miller C, Ridpath JF, Yoon K-J, Zimmerman J. December 2009. UV254 inactivation of selected viral pathogens. Proc 2009 International PRRS Symposium. Chicago, Illinois, p 66. Poster presentation.
29. Buehler, J., E. Thacker, K. Lager, **C. Miller**, and B. Janke. Serologic detection of H5 influenza virus infection in swine using ELISA techniques. 2009. The 5<sup>th</sup> International Veterinary Vaccines and Diagnostics Conference, July 19-23, Madison, WI. Oral and Poster presentation.
30. Nibert, M. L., M. M. Arnold, T. J. Broering, and **C. L. Miller.** 2008. The reovirus platform: nonstructural protein  $\mu$ NS and its multiple roles in viral factories. 9<sup>th</sup> Annual Symposium on Antiviral Drug Resistance Targets and Mechanisms. November 16-19, 2008. Wyndham Virginia Crossings, Richmond, Virginia. Oral presentation.
31. Q. Qin, C. Hastings, and **C. L. Miller.** 2008. Mammalian orthoreovirus infection

interferes with stress granule formation. American Society of Virology 27<sup>th</sup> Annual Meeting, July 12-16, 2008, Ithaca, New York. Poster presentation.

32. **C. L. Miller**, M. Arnold, C. Eichwald, T. Broering, J. Kim, J. Dinoso, and M. Nibert. 2006. Cytoplasmic inclusions of Reoviridae members as platforms for examining protein-protein associations inside cells. American Society of Virology 25<sup>th</sup> Annual Meeting, July 15-19, 2006, Madison, Wisconsin. Oral Presentation.
33. **C. L. Miller**, J.S.L. Parker, J. B. Dinoso, C. Piggot, , M. J. Perron and M.L. Nibert. Increased ubiquitination and other covariant phenotypes attributed to a strain- and temperature-dependent defect of reovirus core protein  $\mu 2$ . American Society for Virology 23<sup>rd</sup> Annual Meeting, July 10-14, 2004, Montreal, Quebec, Canada. Oral Presentation.
34. **C. L. Miller**, T.J. Broering, J.S.L. Parker, M. M. Arnold, and M.L. Nibert. Reovirus  $\sigma$ NS protein localizes to inclusions through an association that requires the  $\mu$ NS amino-terminus and is promoted by RNA. American Society for Virology 22<sup>nd</sup> Annual Meeting, July 12-16, 2003, Davis, California. Oral Presentation.
35. **C. L. Miller**, A. Newman and D. Pintel. 2001. MVM NS2:Crm1 interaction is important for a late step in viral replication. American Society for Virology 20<sup>th</sup> Annual Meeting, July 21-25, 2001, Madison, Wisconsin. Oral Presentation.
36. **C. L. Miller**, A. Newman, and D. Pintel. 2000. MVM(i) NS2:crm1 interaction is important for a late step in viral replication in murine S49 lymphocytes. VIII Parvovirus Workshop, June 28-July 2, 2000, Mont Tremblant, Quebec, Canada. Poster.
37. **C. L. Miller** and D. Pintel. 1999. The small parvovirus non-structural protein NS2 is an inhibitor of NS1 induced cellular apoptosis. Programmed Cell Death. Sept. 29-Oct.3, 1999, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY. Poster.
38. **C. L. Miller** and D. Pintel. 1999. Investigation of MVM NS2 degradation. American Society for Virology 18<sup>th</sup> Annual Meeting. July 10-14, 1999, Amherst, Massachusetts. Oral Presentation.

### **Abstracts, Non-refereed**

1. Guo, B., Lehnen, A. Cho, M., Lager, K., and Miller, C., 2015. Translating reovirus basic biology towards a universal mucosal vaccine. 8<sup>th</sup> Biennial All-Iowa Virology Conference, Mar 6-7, Iowa City, IA. Poster Presentation.
2. Gupta, P., and **Miller, C.** 2013. Mammalian Orthoreovirus infection of hypoxic prostate tumor cells induces downregulation of HIF-1 $\alpha$  and apoptotic tumor cell death. Holden Comprehensive Cancer Center Retreat, June 13, Coralville, Iowa. Poster presentation.
3. Buehler, J., Navi, D., Vincent, A., Lorusso, A., Lager, K., and **Miller, C.** 2013. Sequence dependent translational regulation of PB1-F2 of Influenza A virus. The Seventh Biennial All-Iowa Virology Symposium, March 29-30, 2013. Oral presentation.

4. Carroll, K., and **Miller, C.** 2013. Investigation of the role of mammalian orthoreovirus protein  $\mu$ NS in stress granule modulation. The Seventh Biennial All-Iowa Virology Symposium, March 29-30, 2013. Poster presentation.
5. Gupta, P., and **Miller, C.** 2013. Mammalian Orthoreovirus induces apoptosis in hypoxic prostate tumor cells and downregulates HIF-1 $\alpha$  via RACK1-mediated proteasomal degradation and translational inhibition. The Seventh Biennial All-Iowa Virology Symposium, March 29-30, 2013. Poster presentation.
6. Carroll, K., and **Miller, C.** 2012. Investigation of the role of mammalian orthoreovirus protein  $\mu$ NS in stress granule modulation. CVM Research Day, Aug. 10, Ames, IA. Poster presentation.
7. Gupta, P., Darling, R., and **Miller, C.** 2012. Mammalian orthoreovirus induces apoptosis in hypoxic prostate tumor cells and downregulates HIF-1 $\alpha$  via RACK1-mediated proteasomal degradation and translational inhibition. CVM Research Day, Aug. 10, Ames, IA. Poster presentation.
8. Buehler, J., Navi, D., Vincent, A., Lorusso, A., Lager, K., and **Miller, C.** 2012. Elucidating the role of virus lineage and RNA sequence in translational regulation of influenza virus PB1-F2. CVM Research Day, Aug. 10, Ames, IA. Poster presentation. *Graduate student poster award, 1<sup>st</sup> Place.*
9. Hamelin, L. Baoqing, G., and **Miller, C. L.** 2011. Development of a Universal Oral Mammalian Orthoreovirus Vected Vaccine for Infectious Diseases in Animals. CVM Research Day, Aug. 12, Ames, IA. Poster Presentation.
10. Gupta, P. and **Miller, C. L.** 2011. Investigation of the impact of mammalian orthoreovirus infection on hypoxic cancer cells. CVM Research Day, Aug. 12, Ames, IA. Poster Presentation. *Graduate student poster award, 3<sup>rd</sup> Place.*
11. Buehler, J. McCullough, D., Kohns, C., Loving, C., Lorusso, A., Vincent, A., Lager, K., and **Miller, C.** 2011. Characterization of swine influenza virus PB1-F2 properties in swine and human cells. CVM Research Day, Aug. 12, Ames, IA. Poster Presentation.
12. Buehler, J. McCullough, D., Loving, C., Vincent, A., Lager, K., and **Miller, C.** 2010. Swine influenza virus PB1-F2: An important mystery. The Sixth Biennial All-Iowa Virology Symposium. November 12-13. University of Iowa, Iowa City. Oral Presentation.
13. Blitvich, B. J., Firth, A. E., Wills, N. M., **Miller, C. L.**, Brault, A. C., and Atkins, J. F. 2010. Evidence for ribosomal frameshifting and a novel overlapping gene in the genomes of insect-specific flaviviruses. The Sixth Annual All-Iowa Virology Symposium. November 12-13. University of Iowa, Iowa City. Poster.
14. Qin, Q., Hastings, C., Kreger, K., and **Miller, C. L.** 2010. Mammalian orthoreovirus escape from host translational shutoff correlates with stress granule disruption and is independent of eIF2 $\alpha$  phosphorylation and PKR. The Sixth Annual All-Iowa Virology

Symposium. November 12-13. University of Iowa, Iowa City. Poster.

15. Gupta, P. and **Miller, C.** 2010. Investigation of the impact of mammalian orthoreovirus infection on hypoxic cancer cells. The Sixth Annual All-Iowa Virology Symposium. November 12-13. University of Iowa, Iowa City. Poster
16. Qin, Q., Hastings, C., and **Miller, C.** 2010. Disruption of Stress Granules is Important for Mammalian Orthoreovirus Escape from Host Translational Shutoff. One Health Symposium, ISU Sept. 15, Ames, IA. Poster.
17. Buehler, J., McCullough, D., Loving, C., Vincent, A., Lager, K., and **Miller, C.** 2010. Investigation of the function of the influenza A virus PB1-F2 protein during infection of swine and human cells with a predominant circulating strain. One Health Symposium, ISU Sept. 15, Ames, IA. Poster.
18. Miller, A. G., Gupta, P., and **Miller, C.** 2010. Investigation of the impact of mammalian orthoreovirus infection on hypoxic tumor cells.. 2010 One Health Symposium, ISU Sept. 15, Ames, IA. Poster.
19. L. Junk, D. McCullough, and **C. L. Miller.** 2010. Development of mammalian orthoreovirus as a universal vaccine vector. One Health Symposium, ISU Sept. 15, Ames, IA. Poster.
20. Buehler, J., McCullough, D., Loving, C., Vincent, A., Lager, K., and **Miller, C.** 2010. Investigation of the function of the influenza A virus PB1-F2 protein during infection of swine and human cells with a predominant circulating strain. 2010. CVM Research Day, ISU, Aug. 13, Ames, IA. Poster.
21. Miller, A. G., Gupta, P., and **Miller, C.** 2010. Investigation of the impact of mammalian orthoreovirus infection on hypoxic tumor cells.. 2010. CVM Research Day, ISU, Aug. 13, Ames, IA. Poster. *Summer scholar poster Award, 2<sup>nd</sup> Place.*
22. L. Junk, D. McCullough, and **C. L. Miller.** 2010. Development of mammalian orthoreovirus as a universal vaccine vector. CVM Research Day, ISU, Aug. 13, Ames, IA. Poster
23. Q. Qin, C. Hastings, and **C. L. Miller.** Mammalian orthoreovirus infection interferes with stress granule formation. Faculty Spring Conference, ISU, Mar. 27-28, 2008, Ames, IA. Poster.
24. Q. Qin, C. Hastings, and **C. L. Miller.** Mammalian orthoreovirus infection interferes with stress granule formation. CVM Research Day, ISU, Aug 15, 2008, Ames, IA. Poster.
25. J. Buehler, B. Janke, E. Thacker, K. Lager, and **C. L. Miller.** Detection of H5N1 avian influenza in swine with an indirect ELISA. CVM Research Day, Aug. 15 2008, Ames, IA, Poster.
26. Q. Qin, C. Hastings, and **C. L. Miller.** Mammalian orthoreovirus induces cellular stress

granules at early times following infection. All Iowa Virology Symposium, Sept. 19-20 2008, Ames, IA, Oral Presentation.

27. **C. L. Miller**, Q. Qin, and C. Hastings. Mammalian orthoreovirus interferes with cellular stress granule formation at late times in infection. All Iowa Virology Symposium, Sept. 19-20 2008, Ames, IA, Oral Presentation.

28. J. Buehler, B. Janke, E. Thacker, K. Lager, and **C. L. Miller**. Detection of H5N1 avian influenza in swine with an indirect ELISA. All Iowa Virology Symposium, Sept. 19-20 2008, Ames, IA, Poster.

29. **C. L. Miller**. Building a viral factory: Reovirus  $\mu$ NS works a double shift. All Iowa Virology Symposium, Oct. 13-14, 2006, Iowa City, IA. Oral Presentation.

### **Patents**

Max L. Nibert, **Cathy Lea Miller**, and Teresa J. Broering, Method and Composition for Detecting Protein-Protein and Protein-Nucleic Acid Interactions, US patent application 11/856,099, International Patent Application No. PCT/US06/09319, US Published Application No. US 8652796 B2

### **Invited Seminars**

**Iowa State University**, CVM, CVM Faculty Research Day speaker, January 2016, entitled “Oncolytic reovirus suffocation of the hypoxic response in prostate cancer “

**University of Nebraska**, University of Nebraska Medical Center College of Dentistry, April 2014, entitled, “Turning the Tables: Usurping the Natural Properties of Reovirus for Cancer Therapy and Gene Delivery”

**Iowa State University**, CVM, CVM Faculty Research Day speaker, January 2014, entitled, “Reovirus genome packaging: Translating basic science into mucosal vaccine design”

**Iowa State University**, Department of Biomedical Sciences, November 2013 entitled “Turning the tables: Usurping the natural properties of Reovirus for cancer therapy and vaccine delivery”

**Iowa State University**, CVM, CVM Faculty Research Day speaker, January 2013, entitled, “Miller lab: from Basic to applied science”

**Iowa State University**, Microbiology Undergraduate club, October, 2012 entitled “Tumor hypoxia: Reovirus to the Rescue?”

**Iowa State University**, Department of Genetic, Development, and Cell Biology, April 2012, entitled “Hypoxic Tumor Cells: Reovirus to the Rescue?”

**Des Moines University**, Department of Microbiology, May 2011, entitled “Tales of two segmented viruses: Reovirus, cellular stress, and cancer, and the mystery of the PB1-F2 protein of swine influenza virus”

**Indiana University**, Department of Microbiology, Oct. 2010, entitled “All stressed out: Reovirus translation, cellular granules, and cancer”

**Iowa State University**, Department of Biochemistry, Biophysics, and Molecular Biology, Feb. 2010, entitled “All stressed out: Reovirus translation, cellular granules, and cancer”

**Iowa State University**, Biochemical, Biophysical, and Molecular Biology undergraduate club, April 2009 entitled “Mammalian orthoreoviruses and the cellular stress response”.

**University of Iowa**, Department of Microbiology, Feb. 2008, entitled “Mammalian orthoreovirus interferes with stress granules to disrupt the cellular stress response”.

**Louisiana State University**, Department of Pathobiology, School of Veterinary Medicine, May 4, 2007. “Working a triple shift in the reovirus factory”

**University of Missouri**, Department of Molecular Microbiology and Immunology, Dec. 2005 entitled “Building a Viral Factory: Reovirus  $\mu$ NS works a double shift”.

**Michigan State University**, Department of Microbiology and Molecular Genetics, Nov. 2005 entitled “Building a Viral Factory: Reovirus  $\mu$ NS works a double shift”.

**Iowa State University**, Department of Microbiology and Preventive Medicine, Oct. 2005 entitled “Building a Viral Factory: Reovirus  $\mu$ NS works a double shift”.

**University of Kansas Medical School**, Department of Microbiology, Molecular Genetics, and Immunology, Aug. 2005 entitled “Building a Viral Factory: Reovirus  $\mu$ NS works a double shift”.

### **Invited Meeting Talks**

**27<sup>th</sup> Annual Nebraska Center for Virology Intercampus Virology Meeting**, March 20-21 2016. Invited Keynote Speaker, Entitled “Oncolytic reovirus infection suffocates critical players in prostate cancer progression”

**Rocky Mountain Virology Association, Annual Meeting**, October 3-5, 2014, Invited Keynote Speaker, Entitled “Tumor hypoxia: Reovirus to the rescue?”.

**Great Plains Infectious Disease Meeting**, Sept. 22-23, 2011, Invited Speaker. Entitled “Reovirus translation, cellular granules and cancer”.

### **Research Support**

#### **Ongoing Research Support**

Source: Bailey Research Award  
Title: Investigating viral oncotherapy as a novel inhibitor of prostate cancer progression  
PI: Cathy Miller

Dates: 7/2015-6/2018  
Award: \$150,000.00 Direct Costs  
Major Goals: The goals of this grant are to identify molecular determinants of reovirus downregulation of androgen receptor and determine the impact of reovirus infection on prostate cancer invasion and metastasis.

### Completed Research Support

Source: The Iowa Pork Board  
Title: Development of novel reovirus-based mucosal vaccine vectors for PEDV antigen production  
PI: Cathy Miller, Co-PI: KJ Yoon  
Dates: 6/2015-5/2016  
Award: \$25,000.00 Direct Costs  
Major Goals: The goals of this grant are to investigate mechanisms for expression of PEDV antigens from novel reovirus-based vectors for the production of mucosal vaccine vectors.

Source: PIIR Seed Funding (sub-award from Integrated, Interdisciplinary Vaccine Research Against Antigenically Diverse Viruses award)  
Title: Characterization and Development of an ex vivo Mucosal Vaccine Delivery System with Intestinal Stem Cells  
PI: Chenxu Yu, Co-PIs Qun Wang, Cathy L. Miller  
Dates: 10/14/2014-06/30/2015  
Award: \$ 29,000.00 Direct Costs  
Major goals: The goals of this grant are to collaborate with other PIIR investigators to characterize naked and reovirus  $\sigma 1$  decorated nanoparticle transport across a mini-gut system with and without M cell incorporation.

Source: Margaret B. Barry Cancer Research Award  
Number: 2703269  
Title: Defining the molecular mechanism of oncolytic virus killing of hypoxic tumor cells  
Dates: 11/2011-12/2014  
Award: \$120,000.00 Direct Costs  
Major goals: The goals of this grant are to identify the molecular pathways of reovirus induced apoptotic killing and HIF-1 $\alpha$  downregulation in hypoxic prostate tumor cells.

Source: PIIR Seed Funding (sub-award from Integrated, Interdisciplinary Vaccine Research Against Antigenically Diverse Viruses award)  
Title: A Reovirus Universal Mucosal Vaccine Delivery System: Proof of Concept  
PI: Cathy L. Miller, Co-PIs Kelly Lager, Michael Cho, James Roth, K.J. Yoon  
Dates: 3/1/2014-5/31/2014  
Award: \$ 19,281.00 Direct Costs  
Major goals: The goals of this grant are to collaborate with other PIIR investigators to introduce antigenic peptides/proteins from PEDV, HIV, and Influenza A into a prototype MRV vaccine vector to provide proof of concept for additional funding investigating the efficacy of an MRV mucosal delivery vector.

Source: NIH, NIAID  
Number: R15AI090635

Title: Virus and Cell Regulation of Reovirus Escape from Translation Inhibition  
PI: Cathy L. Miller  
Dates: 8/2010-8/2014  
Award: \$300,000.00 Direct Costs, \$130,568.00 Indirect Costs  
Major goals: The goals of this grant are to define the mechanism and viral and host cell factors involved in mammalian orthoreovirus escape from translational shutoff induced by the cell innate immune system.

Source: USDA Specific Cooperative Agreement  
Number: 58-3625-0-650  
Title: Development of an oral vaccine vector for infectious diseases of animals.  
PI: Cathy Miller  
Dates: 9/2010-2/2014  
Award: \$250,000.00 Direct Costs  
Major goals: The goals of this grant are to create a universal vaccine vector using mammalian orthoreovirus reverse genetics, provide proof of concept of creation of the vector, and examine the ability of the vaccine to elicit a strong immune response in animals.

Source: CVM Seed Grant  
Title: Characterization of the PB1-F2 protein of swine influenza virus  
PI: Cathy L. Miller  
Dates: 7/2011-7/2013  
Award: \$32,000 Direct Costs  
Major goals: The goals of this grant are to characterize the role of swine influenza virus PB1-F2 protein with regards to plasma membrane permeabilization and transcriptional regulation in infected cells.

Source: The Iowa Pork Board  
Number: 09-205, 10-161  
Title: Investigating the role of PB1-F2 in the pathogenicity of circulating strains of swine influenza virus.  
PI: Cathy Miller, Amy Vincent, Kelly Lager  
Dates: 7/2009-7/2012  
Award: \$50,000.00 Direct Costs  
Major goals: The goals of this grant are to examine the role of PB1-F2, an influenza virus protein involved in apoptosis and enhanced secondary bacterial infection, in the pathogenicity of strains of swine influenza virus that are currently circulating in the pig population.

Source: USDA Specific Cooperative Agreement  
Number: 58-3625-8-712  
Title: Study of Influenza A Viruses  
PI: Cathy L. Miller  
Dates: 08/2008-12/2011  
Award: \$150,000.00 Direct Costs  
Major Goals: The goals of this agreement are to characterize field isolates of swine influenza virus (SIV) for the purpose of utilizing this knowledge to develop improved prevention and control programs.

Source: The Roy J. Carver Charitable Trust  
Number: 08-3181  
Title: The role of stress granules in mammalian orthoreovirus infection  
PI: Cathy L. Miller  
Dates: 5/2008-5/2011



Award: \$254,726.00 Direct Costs  
Major Goals: The goals of this grant are to examine the role of cellular stress granules on successful orthoreovirus infection.

Source: NIH/NIAID  
Number: 1 K22AIO65496-01  
Title: The Role of Reovirus Factories in Viral RNA regulation.  
PI: Cathy L. Miller  
Dates: 7/2006-6/2008  
Award: \$250,000.00 Direct Costs, \$20,000.00 Indirect Costs  
Major Goals: The goals of this grant are to examine the role of reovirus factories in regulation of viral RNA transcription, translation and replication, and to identify viral and cellular proteins involved in these steps of reovirus replication.

Source: NIH/NIAID  
Number: 5 F32-AI056939-02  
Title: Research Training in Virus RNA Localization  
PI: Cathy L. Miller  
Dates: 08/2003-07/2005  
Award: \$95,348.00 Direct Costs  
Major Goals: The goals of this training grant are to examine the localization of reovirus RNA during viral infection, and further to identify viral proteins and RNA sequences involved in the localization process.

### **TRAINEES: PH.D, MS, PROFESSIONAL, UNDERGRADUATE, HIGH SCHOOL**

#### **Major Professor/Co-major Professor MS and Ph.D. Students**

2006-2010	Qingsong Qin, Veterinary Microbiology and Preventive Medicine, Major professor, PhD Defense: April 2010, Current position: Postdoctoral Fellow, Pennsylvania State University.
2007-2012	Nichole Hines, Veterinary Microbiology and Preventive Medicine, Ph.D. candidate, Co-major professor with Brundiban Panigrahy (NVSL), Ph.D. defense, April 2012, Current position: Section head NVSL.
2008-2013	Jason Buehler, Veterinary Microbiology and Preventive Medicine, Ph.D. candidate, Major Professor, PhD Defense: Spring, 2013, Current position: Postdoctoral Fellow, University of Arizona.
2009-2014	Matt Kappes, Immunobiology Program, Co-major professor with Dr. Kay Faaberg (NADC), Ph.D. Defense, Fall 2014, Current position: Postdoctoral Fellow, SRI International, Biosciences Division.
2010-2014	Pooja Gupta, Genetics Program, Major professor, Ph.D. Defense, Fall 2014. Current position: Scientist, Kinome Pharma.
2010-2013	Kate Carroll, Genetics Program, Major professor, MS defense, Spring 2013. Current position: PhD Student, University of Pittsburgh.
2011-2012	Qi Chen, Veterinary Microbiology and Preventive Medicine, MS candidate, Major professor, MS Defense, Summer 2012. Current position: PhD student, ISU.
2012-2015	Kaitlin Brien, MS, Interdepartmental Microbiology and Interdepartmental Genetics, Iowa State University

- 2012-2015 Luis Hernandez, Veterinary Microbiology and Preventive Medicine, Ph.D. candidate, Co-major professor with Erik Vaughn, PhD Defense: Spring 2015, Current position: Scientist IV, Boehringer Ingelheim Vetmedica.
- 2012-2015 Kirsten Eberle, Immunobiology/MCDB, Ph.D. candidate, Co-major professor with Dr. Randy Sacco, Projected graduation date, Fall 2015.
- 2012-2013 Laura Hamelin, VMPM, Ph.D. candidate, Major professor, withdrew from program, 2013.
- 2014-present Jordan Eder, Immunobiology Program, Iowa State University, PhD candidate. Co-major professor.
- 2015-present Luke Bussiere, Interdepartmental Microbiology Department, Ph.D., Projected graduation date Spring 2019.

### **Program of Study Committee Member, Iowa State University**

- 2007-2011 Jelena Kraft, Plant Pathology, Iowa State University
- 2007-2010 Abby Patterson, Veterinary Diagnostic and Production Animal Medicine, Iowa State University
- 2007-2011 Avanti Sinha, Interdepartmental Microbiology Program/Veterinary Microbiology and Preventive Medicine, Iowa State University
- 2008-2013 Lucas Huntimer, Immunobiology Program, Iowa State University
- 2008-2014 Alice Hui, Plant Pathology, Iowa State University
- 2008-2012 Zhanqi Shen, Interdepartmental Genetics Program, Iowa State University
- 2010-2013 Dong Son, Veterinary Diagnostic and Production Animal Medicine, Iowa State University
- 2010-2015 Saikat Banerjee, Biomedical Sciences, Iowa State University
- 2010-2010 Stacy Duncan, Bioinformatics and Computational Biology, Iowa State University (filled in for absent committee member on Ph.D. defense)
- 2010-2015 Joonbae Seo, Biomedical Sciences, Iowa State University
- 2011-2014 Duan Loy, Veterinary Microbiology and Preventive Medicine, Iowa State University
- 2011-2011 Michelle Heimann, Veterinary Diagnostic and Production Animal Medicine, Iowa State University
- 2011-2014 Rungrat Saiyasombat, Veterinary Microbiology and Preventive Medicine, Iowa State University
- 2011-2014 Jerald Chavez, Animal Sciences, Iowa State University
- 2011-2013 Justus Hallam, Kinesiology and Immunobiology, Iowa State University
- 2011-2016 Muhammet Ay, Biomedical Sciences, Iowa State University
- 2012-present Hai Hoang, Veterinary Microbiology and Preventive Medicine, Iowa State University
- 2012-2016 Nikhil Panicker, MCDB, Biomedical Sciences, Iowa State University
- 2013-2016 Alyssa Evans, Animal Sciences, Iowa State University
- 2013-present Ross Darling, Immunobiology Program, Iowa State University
- 2013-2016 Aditi Agrawal, Biomedical Sciences, Iowa State University
- 2013-present Jie (Dan) Luo, Biomedical Science, Iowa State University
- 2014-2015 Mariah Kemmerer, Interdepartmental Microbiology, Iowa State University
- 2014-present Mahesh Bhandari, Immunobiology Program, Iowa State University
- 2015-2016 Kari Rohl, Immunobiology Program, Iowa State University
- 2015-2015 Olga Volodina, Genetics and Genomics Program, BMS, Iowa State University, switched laboratory and changed POS committee.

2015-present Jermilia Charles, MCDB, VMPM, Iowa State University.  
2015-present Katie Gibson, Immunobiology, VDPAM, Iowa State University  
2015-present Christine Meuhenthaler, Interdepartmental Microbiology, Iowa State University

### **External Reviewer Ph.D. Thesis**

2008 Rashad Munir Khawaja thesis entitled “Biological and Molecular Characterization of Indigenous Isolates of Foot-and-Mouth Disease Virus submitted to University of Veterinary and Animal Science, Ph.D. candidate, Microbiology Department, Lahore, Pakistan

### **Rotation Students**

2006 Avanti Sinha, Interdepartmental Microbiology Program  
2007 Lucas Huntimer, Immunobiology Program  
2009 Nikhil Panicker, MCDB Program  
2009 Pooja Gupta, Genetics Program  
2012 Ross Darling, Immunobiology Program  
2012 Julian Trachsel, Interdepartmental Microbiology Program  
2015 Luke Bussiere, Interdepartmental Microbiology Program

### **Veterinary Summer Scholars**

2010 Lindsay Junk  
2010 Alex Miller  
2011 Laura Hamelin

### **Undergraduate Students**

2008-2010 Kate Kreger, Undergraduate Research Assistantship, Iowa State University  
2010-2011 Chelsie Kohns (Sievers), Undergraduate hourly employee, Iowa State University  
2011-2013 Deepak Navi, Undergraduate hourly employee, Iowa State University  
2012-2012 Melissa Tegttemeyer, Undergraduate hourly employee, Iowa State University  
2013-2015 Tyler Meseke, Undergraduate Research Assistant, Iowa State University  
2013-2013 Kate Russell, Undergraduate Research Assistant, Iowa State University  
2014-2014 Allison Lehnen, Science with Practice Program, Iowa State University

### **High School Students**

2008 Patrick Jahren, Ames High School Intern Program, Ames, Iowa

### **Postdoctoral Fellows and Professional Staff**

2006-2010 Craig Hastings, MA, Research Associate II

2008-2011 Dana McCullough, MA, Research Associate I  
2011-2014 Guo Baoqing, MS, Ph.D., Assistant Scientist III  
2015-present Promisree Choudhury, Postdoctoral Fellow

## **COMMITTEE SERVICE**

### **Iowa State University Wide Committees (University Level)**

2009-present Iowa State RNA Club Advisory Committee, Member  
2013-2016 Biotech Council, Member  
2013-2014 Alliance for the Arts in Research Universities, CVM Liaison to Fall 2014 Conference at ISU  
2013 Health Research Initiative (Cho et al, The Development of Novel Strategies for the Efficient Diagnosis, Prevention, Control, and Treatment of Infectious Diseases), Participating Junior Scientist  
2013-2015 Presidential Initiative for Interdisciplinary Research (Cho, Roth, Yoon PIs; Integrated, Interdisciplinary Vaccine Research Against Antigenically Diverse Viruses), Participating Junior Scientist  
2014 BBMB Faculty Search Committee, Outside member.  
2015-present Institutional Biosafety Committee, Member  
2015-present Graduate Catalog and Curriculum Committee, Member

### **College of Veterinary Medicine Committees (College Level)**

2006-present Endowed Lectures Committee, Member  
2007-2009 Concurrent DVM/Ph.D. Committee, Member  
2008-2015 Ramsey Series Seminar Committee, Member  
2008 Search Committee, VMPM Departmental Chair, Member  
2012 Search Committee, CVM Associate Dean for Research, Member  
2012-2014 CVM Graduate Curriculum Committee, Member  
2013-present VMRI Advisory Committee  
2013-2014 Search Committee, CVM Presidential High Impact Hires, Member  
2014-2016 CVM Graduate Curriculum Committee, Co-chair  
2016-present CVM Graduate Curriculum Committee, Chair

### **Department of Veterinary Microbiology and Preventive Medicine Committees (Department Level)**

2008-2010 Veterinary Microbiology/Veterinary Pathology Seminar Committee, Co-chair

### **Interdepartmental Microbiology Committees (Interdepartmental Program Level)**

2008-2010 Admissions Committee, Member  
2009-2010 Admissions Committee, Chair  
2010-present Supervisory Committee, Member

### **Immunobiology Department Committees (Interdepartmental Program Level)**

2011-present Membership Committee

### **UNIVERSITY SERVICE**

2007 Panel Member, New Faculty Orientation, Aug. 13, 2007 Panel Title: "You're here, now what?"  
2008 All-Iowa Virology Conference, Sept. 19-20, Ames, IA, Co-organizer  
2013 All-Iowa Virology Conference, Mar. 29-30, Ames, IA, Co-organizer  
2013 Judge, Poster Competition, Summer Scholars, CVM Research Day  
2013 Judge, Poster Competition, MCDB GSO Interdepartmental Poster Competition  
2013 Judge, Poster Competition, Micro408 Student Projects  
2014 NIH R15 AREA Grant Information Session, Presenter, Panel Member

### **SERVICE TO NATIONAL ASSOCIATIONS**

2007 Workshop Chair: The American Society for Virology 26<sup>th</sup> Annual Meeting, Corvallis, OR, July 14-18, 2007. Title of Workshop: "Reoviruses, Birnaviruses and Orbiviruses".  
2010 Workshop Chair: The American Society for Virology 29<sup>th</sup> Annual Meeting, Bozeman, MT, July 17-21, 2010. Title of Workshop: "RNA Virus Replication and Gene Expression 1: Gene Expression".  
2012 Workshop Chair: The American Society for Virology 31<sup>st</sup> Annual Meeting, Madison, WI, July 21-25, 2012. Title of Workshop: "Reoviruses and Birnaviruses".  
2012-present Editorial Board, Journal of Virology, American Society of Microbiology Journal, Invited for second term, 2015  
2016 Workshop Chair: The American society for Virology 35<sup>th</sup> Annual Meeting, Blacksburg, VA, June 18-22, 2016. Title of Workshop: "Viruses and Innate Immunity II".

### **OTHER NATIONAL SERVICE**

2012 External Consultant for NIH R15 AREA Grant Proposal for Dr. Teri Shors, Department of Biology and Microbiology, University of Wisconsin, Osh Kosh

### **JOURNAL AND GRANT REVIEW**

#### **Ad Hoc Journal Reviewer**

2006-present Biochemical and Biophysical Research Communications  
2008-present Clinical and Vaccine Immunology  
2009-present Journal of Virology  
2010-present Journal of Clinical Microbiology  
2010-present PLOS One  
2011-present Journal of General Virology  
2011-present Nature Reviews Microbiology  
2012-present Journal of Proteome Research

2012-present Applied and Environmental Microbiology  
2012-present Proteomics  
2013-present Virology  
2014-present PLOS Pathogens  
2016-present Viruses

### **External Grant Reviewer**

2008-2009 The Ohio Agricultural and Development Center Research and  
Enhancement Competitive Grant Program (SEEDS)  
2008 The United States-Israel Bi-national Agricultural Research and  
Development Fund (BARD)  
2010, 2011 National Pork Board 2011 General Call RFP  
2012 Ad Hoc Reviewer, NIH, NIAID, Microbiology and Infectious Disease B  
Study Section  
2013, 2014 Natural Sciences and Engineering Research Council of Canada (NSERC)  
Discovery Grant, Reviewer

### **Intramural Grant Reviewer**

2006-2009 Graduate Research Award in Microbiology Review committee, yearly  
award given to proposals in microbiology written by graduate students  
2006, 08, 10, Healthy Livestock Initiative Competitive Grants, College of Veterinary  
12 Medicine, Iowa State University  
2009 Iowa Center for Advanced Neurotoxicology Grants  
2011, 2015 CVM Seed Grants  
2014 Margaret Barry Cancer Research Award  
2016 Bailey Research Award