

Claudia A. Muñoz-Zanzi, DVM, MPVM, PhD

Curriculum Vitae

Affiliation

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Education

1988 – 1994 University of Concepcion, Chillan, Chile. School of Veterinary Medicine.
Degree: Doctor in Veterinary Medicine (DVM)
1995 – 1997 University of California, Davis, USA.
Degree: Master of Preventive Veterinary Medicine (MPVM).
1997 – 2002 University of California, Davis, USA.
Degree: Ph.D. in Epidemiology.
2002 – 2003 University of Illinois, Urbana, IL
Post-doctoral associate (molecular epidemiology)
2020 WHO/TDR, CIDEIM
Certificate, Implementation Research with a focus on infectious diseases of poverty

Professional employment and academic appointments

1994 – 1995 Instructor of Veterinary Epidemiology and Public Health. Department of Pathology, School of Veterinary Medicine, University of Concepcion, Chillan, Chile.
2003 – 2006 Assistant Professor (non-tenure track). Department of Veterinary Population Medicine, University of Minnesota.
2006 – 2014 Assistant Professor. Division of Epidemiology and Community Health, School of Public Health, University of Minnesota.
2014 – 2017 Associate Professor. Division of Epidemiology and Community Health, School of Public Health. University of Minnesota.
2017 – Present Associate Professor. Division of Environmental Health Sciences, School of Public Health, University of Minnesota.

Honors and scholarships

1995 Chilean Association of Veterinary Medicine. Best Student of Class 1992 of the School of Veterinary Medicine, University of Concepcion, Chile.
1998-1999 American Association of University Women scholarship.
1998-2001 Jastro Shields Grant. Graduate Group in Epidemiology, University of California, Davis.
1999-2001 Eugene Lyons Scholarship. School of Graduate Studies, University of California, Davis.
2000 Association of Teachers of Veterinary Public Health and Preventive Medicine.
Graduate Student Award in Epidemiology and Health Economics section at the 81st CRWAD meeting.
2003 American Association of Veterinary Diagnosticians Foundation's 2002 Journal of Veterinary Diagnostic Investigation Award.
2007 Boehringer Ingelheim 2006 Advancement in PRRS Research Award
2010 “Distinguish Mentor Award”, President’s Distinguish Faculty Mentor Program, Multicultural Center for Academic Excellence, University of Minnesota

- 2022 “Certificate for Dedication to Student Learning” from the Center for Educational Innovation, University of Minnesota
- 2022 “University of Minnesota Distinguished Global Professor”, Global Engagement Award.

Memberships and service

- Co-Chair, Global Leptospirosis Environmental Action Network (2018-Present)
- Executive Committee, International Leptospirosis Society (2011 – Present)
- Advisory Board, Center for Global Health and Social Responsibility (2018-2020)
- Advisory Board, National Institute of Mathematical and Biological Synthesis (NIMBioS) (2014 – 2018)
- Scientific review panel, NSF (2022)
- Scientific review panel, University of California Multicampus-National Laboratory Collaborative Research and Training Awards (2021)
- Scientific review panel, NIH (2007, 2008, 2022)
- Scientific review panel, USDA-NRI (2004, 2007)
- Scientific review panel, Global Health Fellowship Program, Fogarty Center (2015)
- Associate Editor, PLoS Neglected Tropical Diseases (2012 – 2022)
- Member, International Leptospirosis Society (2007 – Present)
- Member, International Society of Infectious Diseases (2008 – Present)
- Member, Models of Infectious Disease Agent Study (MIDAS) Network (2020-Present)
- Member, WHO/TDR Program for research and training on tropical diseases (2022- Present)

University of Minnesota service

- Awards Committee, School of Public Health (2022 – Present)
- Women’s Faculty Cabinet, University of Minnesota (2022-Present)
- International Programs Council, Global Programs and Strategy Alliance, University of Minnesota. School of Public Health representative (2022- Present)
- Latino Faculty and Staff Association, University of Minnesota, Executive Committee (2021- Present)
- Co-Chair, Global Health Work Group, School of Public Health, University of Minnesota (2017-Present)
- Admission Committees, Epidemiology MPH (2006-2009, 2016-2017), Epidemiology PhD (2010 – 2012), Public Health Practice (2015)
- Curriculum Committee, Epidemiology MPH (2014 – 2017)
- Mentor, President's Distinguished Faculty Mentor Program, Multicultural Center for Academic Excellence, Office for Equity and Diversity (2009-2010,2012-2013, 2015-2016)
- Scientific review panel, J.B. Hawley Student Research Award (2007 – 2009), Seed Grant Academic Health Center (2008), UROP (2011-2013), MNDrive (2020), Center for Global Health Pilot Project Program (2021)
- Grant-in-Aid Research Program, review committee (2023 – Present)
- Global Health Education Workgroup, Medical School (2022 – Present)

Graduate Faculty Programs and other academic appointments:

- Program Director, Global Health Minor and Certificate programs, School of Public Health (2021-Present)
- Advisory Committee, Master of Development Practice Program, Humphrey School of Public Affairs and the Interdisciplinary Center for the Study of Global Change (2022-Present)

- Adjunct Faculty, University CES, Medellin, Colombia (2021- Present)
- Graduate faculty, Epidemiology MPH and PhD, University of Minnesota
- Graduate faculty, Environmental Health MPH, PhD, University of Minnesota
- Graduate faculty, Global Health minor, University of Minnesota

Grants

Past grants

- Use of transmission models to develop BVDV control strategies. Center for Food Animal Health, UC Davis. 2000-2001, \$19,000 (co-Principal Investigator)
- Least-cost and overall sensitivity and specificity of pooled-sample testing for low prevalence diseases in food animals. Livestock Disease Research Laboratory, UC Davis California, Davis. 2000-2001, \$10,000 (co-Principal Investigator)
- Influence of Bovine Viral Diarrhea on Cattle Production within Illinois. Illinois Council on Food and Agricultural Research. 07/01/00 – 12/31/02, \$133,000 (co-Principal Investigator)
- Diagnosis of Bovine Viral Diarrhea Persistent Infection in Illinois Cattle Illinois Department of Agriculture. 07/01/00 – 06/30/02, \$21,300 (co-Principal Investigator)
- New testing strategies to detect *Mycobacterium paratuberculosis* on dairy herds. USDA-APHIS. 10/01/03 – 9/30/04, \$77,764 (co-Principal Investigator)
- Sampling of adult boars during early infection using a new blood collection technique for PRRS PCR testing prior to semen collection. National Pork Board 7/1/04 – 4/1/05 \$44,000 (co- Investigator)
- Pilot surveillance system for investigation and control of emerging diseases in the Minnesota swine industry. University of Minnesota. Agricultural Experiment Station, Rapid Response (co- Investigator). 7/01/04 – 12/30/05, \$40,000
- Evaluation of sampling and testing strategies for monitoring of PRRS virus infection in boar studs National Pork Board 1/1/05 – 8/1/06 \$40,477 (Principal Investigator)
- Pilot surveillance system for emerging diseases in swine. National Pork Board \$60,386 1/1/05 – 7/1/06 (co-Investigator)
- Diagnostic and molecular epidemiology of PRRSV in nursery pigs. USDA PRRS Integrated Program (sub-contract). 7/01/04 – 1/1/07, \$24,900 (Principal Investigator)
- Investigation of factors impacting the rate of PRRSV transmission in nursery and finisher pig flows and assessment of transmission rate and timing on economic performance. National Pork Board 1/1/05 – 12/1/06 \$176,000 (PI in sub-contract for \$21,800).
- Field evaluation of an ELISA test to detect turkey flocks infected with avian pneumovirus. Midwest Poultry Consortium 3/1/05 – 3/1/07 \$53,000 (Principal Investigator).
- Development of cost-efficient herd testing protocols based on testing of pooled samples using ELISA. National Pork Board 10/1/05 – 4/1/07 \$45,424 (Principal Investigator)
- Estimation of the sensitivity of PRRSV PCR for pooled serum and blood swab samples from boars during acute infection. Boehringer-Ingelheim Pharmaceuticals. 5/1/06 – 5/1/07. \$24,827 (Principal Investigator).
- Dynamics and variability of viremia in boars after infection with a low-virulence PRRSV strain and the effect on effectiveness of monitoring programs for early detection. USDA- PRRS CAP. 6/1/06- 1/1/08. \$29,000 (Principal Investigator).
- Evaluation of the diagnostic performance of assays used for screening of source animals for xenotransplantation. Rogosin Institute 10/1/05 – 11/1/07 \$75,000 (Principal Investigator)
- Development of a simple on-site diagnostic test to detect PRRSV acute infection in boar studs National Pork Board 12/1/06 – 8/15/08 \$58,000 (Principal Investigator).

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- A cost-effectiveness evaluation of screening programs for congenital infection with toxoplasmosis in Latin America. Minnesota Medical Foundation 1/1/07 – 12/31/07 \$24,000 (Principal Investigator).
- Predicting Salmonella loads on broiler carcasses from pre-harvest Salmonella data collected in broiler houses. USDA NRI-CGP 6/1/07 – 6/1/08 \$340,031 (Co-investigator)
- Assessment of leptospirosis exposure in Midwest populations. Grant-in-Aid, Graduate School, University of Minnesota 1/1/08-12/1/09. \$24,235 (Principal Investigator).
- Eco-epidemiology of zoonotic pathogens transmission and its impact on public health. Interdisciplinary International Research Circle Grant, University of Minnesota 6/1/08 – 7/1/09 \$15,000 (Co-Principal Investigator)
- Development of a simulation model to predict effective strategies for pertussis control in Minnesota. Seed Grant 6/1/09-5/31/10 \$24,000 (co-investigator)
- Toxoplasmosis in Ghana: Seroprevalence study in the Coastal population. International Society for Infectious Diseases 7/1/09 – 10/30/10 \$6,000 (co-Principal Investigator)
- Modeling of Food Production and Distribution Chains for Detecting Microbial Contamination of Food Products. National Center for Food Protection and Defense 5/15/08 – 10/31/10 \$205,000 (co-investigator)
- Food production, food safety and the global food supply. USDA-NRI 11/1/06-8/31/12. \$790,000 (co-principal Investigator).
- Global Leptospirosis Action Network Symposium. Joint Research Centre, European Commission. 3/15/13 – 3/14/14 \$15,000
- RESPOND, Emerging Zoonotic Pandemics. USAID Cooperative Agreement. 10/1/09 – 9/30/2014 (Faculty Expert).
- University of Minnesota Agricultural Safety and Health Center: MRSA colonization and infection in swine veterinarians. NIOSH –CDC. 9/30/11 – 9/29/14 (co-investigator)
- Social ecology of hantavirus in southern Chile. NIH 8/1/12 – 12/1/14 \$160,000 (Principal Investigator)
- Eco-Epidemiology of Leptospirosis in Latin America: Understanding the dynamics of transmission within a community. NSF- EEID 10/1/09-9/30/15 \$1,396,324 (Principal Investigator)
- Eco-epidemiology of leptospirosis. Research Experience for Undergraduates (REU) – National Science Foundation 2/1/11 – 9/30/15 \$7,450 (Principal Investigator).
- Source attribution for human toxoplasmosis in communities from southern Chile. Global Spotlight Program, University of Minnesota. 7/1/12 – 12/30/15 \$96,000 (Principal Investigator)
- The urban house environment as a source of vector-borne diseases in Merida, Mexico. Academic Health Center Seed Grant 1/1/15 – 3/31/16 \$30,000 (Principal Investigator)
- US-Mexico Planning Visits and Pilot Project on the Social-Ecology of Leptospirosis in an Urban-Rural Gradient. NSF - Catalyzing New International Collaborations. 10/1/14 – 3/30/16 \$75,000 (Principal Investigator)
- Global Leptospirosis Environmental Action Network (GLEAN) International Scientific Meeting. World Health Organization. 9/26/16 – 10/11/16 \$37,000 (Principal Investigator)
- Epidemiology of tick-borne diseases in the upper Midwest and knowledge of preventive practices among high-risk workers. Upper Midwest Agricultural Safety and Health Center (UMASH)-NIOSH 4/1/16-3/31/18 \$20,000 (Principal Investigator)
- Capacity Building: developing sustainable international collaborations on animal, public, and environmental health in Ibero-America. UMN OVPR. 3/1/17-2/28/19 \$50,000 (Co-Principal Investigator; PI: A. Perez)

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- Development of a predictive model encompassing environmentally-based drivers to implement preventive actions against Yellow Fever outbreaks. PanAmerican Health Organization 9/1/17-10/31/18 \$45,000 (Principal Investigator)
- Modeling Disease Emergence and Economic Impact of Altered Landscape in Indonesia. USAID. 6/1/17-12/1/19 \$150,369 (Co-investigator, PI: J. Bender)
- Comparison of the environmental characteristics associated with human Leptospirosis in Sri Lanka, Kenya, and Argentina. CGHSR. 9/1/18-9/1/20 \$25,000 (co-investigator, PI: Perez)
- Leptospirosis-associated neonatal sepsis in Uganda. CGHSR. 6/1/17-6/31/21. \$25,000 (Principal Investigator)
- Laboratory capacity building and implementation of enhanced surveillance for leptospirosis and melioidosis in Puerto Rico. National Center for Emerging and Zoonotic Infectious Disease, Center for Disease Control. 9/1/18-6/30/21 \$2,230,000 (co-PI/Project Technical Lead, PI: A. Kircher)
- Effect of the microbiome upon deer tick range expansion in the Upper Midwest. Minnesota Futures, University of Minnesota. 8/1/18-7/31/21 \$250,000 (co-investigator, PI: Oliver)
- Containment interventions and public health, social and family support programs in a rural environment to reduce their vulnerability to COVID-19 epidemic from an intercultural perspective. Consejo Nacional de Ciencia y Tecnologia (Conacyt), Mexico. Rapid Respond Projects. 6/1/20 – 5/31/21 (co-investigator, PI: K Dzul)
- Developing a decision support system for an integrated leptospirosis control program in vulnerable areas. CGHSR. 9/1/20-8/31/22. \$25,000 (Principal Investigator)

Active grants

- A One health initiative to combat rodent infestation threats to public health and well-being of vulnerable communities in Latin America. CGHSR. 1/1/23-7/31/24. \$7,500 (Principal Investigator)
- Evaluating the survival and growth of *Leptospira* in lo'i (wetland taro patches) and loko i'a (fishponds). NIH NIGMS IDeA Networks of Biomedical Research Excellence (INBRE) INBRE IV- HiSREP Program Pilot project for new investigators. University of Hawaii. 4/1/2023-3/31/2025 \$50,000 (PI: C. Vizza, role: mentor)

Publications

1. †Muñoz, G., C. **Muñoz-Zanzi**, S. Cerda. 1995. Evaluation of the environmental health status in rural sectors of the province of Nuble, Bio-Bio region, Chile. *Av Med Vet* 10: 59-63.
2. †Muñoz, G., J. Lopez, C. **Muñoz-Zanzi**. 1996. Serological determination of prevalence of Leptospirosis and Brucellosis in people at risk. *Agroc* 12: 169-173.
3. **Muñoz-Zanzi**, C., M. Thurmond, D. Hird. 1999. Effect of weaning time and associated management practices on post-weaning chronic diarrhea in captive rhesus monkeys (*Macaca mulatta*). *Lab Anim Sci* 49:617-21. PMID: 10638496
4. **Muñoz-Zanzi**, C., W. Johnson, M. Thurmond, S. Hietala. 2000. Pooled-sample testing as a herd-screening tool for detection of bovine viral diarrhea virus (BVDV) persistently infected cattle. *J Vet Diagn Invest* 12: 195-203. PMID: 10826831.
5. Thurmond, M., C. **Muñoz-Zanzi**, S. Hietala. 2001. Effect of a calfhood vaccination program on bovine viral diarrhea virus (BVDV) transmission under typical drylot conditions and exposures. *J Am Vet Med Assoc* 219: 968-975. PMID: 11601795

6. Rush, D., M. Thurmond, **C. Muñoz-Zanzi**, S. Hietala. 2001. Risk of bovine viral diarrhoea virus post-natal infection in dairy cattle under typical management conditions. *J Am Vet Med Assoc* 219: 1426-1431. PMID: 11724183.
7. **Muñoz-Zanzi, C.**, M. Thurmond, S. Hietala, W. Johnson. 2002. Predicted ages of dairy calves when colostrum-derived bovine viral diarrhoea virus antibodies would no longer offer protection against disease or interfere with vaccination. *J Am Vet Med Assoc* 221:678-685. PMID: 12216908.
8. Thurmond, M., W. Johnson, **C. Muñoz-Zanzi**, S. Hietala. 2002. A method of probability assignment that applies Bayes theorem for use in serologic diagnostics, using an example of *Neospora caninum* infection in cattle. *Am J Vet Res.* 63: 318-325. PMID: 11911564
9. Adaska, J., **C. Muñoz-Zanzi**, S. Hietala 2002. Evaluation of result variability using a commercial Johne's disease ELISA kit and repeat testing of samples. *J Vet Diagn Invest.* 14:423-426. PMID: 12296398.
10. **Muñoz-Zanzi, C.**, S. Hietala, M. Thurmond, W. Johnson. 2003. Quantification, risk factors, and health impact of natural congenital infection with bovine viral diarrhoea virus in dairy calves. *Am J Vet Res.* 64: 358-365. PMID: 12661878.
11. **Muñoz-Zanzi, C.**, M. Thurmond, S. Hietala. 2004. Effect of bovine viral diarrhoea virus infection on fertility for the first pregnancy of dairy heifers. *Theriogenol.* 61:1085-1099. PMID: 15036997
12. *Maherchandani, S., **C. Muñoz-Zanzi**, D. Patnayak, Y. Malik, S. Goyal. 2004. The effect of pooling sera on the detection of avian pneumovirus antibodies. *J Vet Diagn Invest.* 16: 497-502. PMID: 15586563.
13. *†Maherchandani, S., D. Patnayak, **C. Muñoz-Zanzi**, D. Lauer, S. Goyal. 2005. Evaluation of five different antigens in enzyme-linked immunosorbent assay for the detection of avian pneumovirus antibodies. *J Vet Diagn Invest.* 17:16-22. PMID: 15690946.
14. *Hermann, J.R., **C.A. Munoz-Zanzi**, M.B. Roof, K. Burkhardt, J.J. Zimmerman. 2005. Probability of porcine reproductive and respiratory syndrome virus infection as a function of exposure route and dose. *Vet Microbiol.*110:7-16. PMID: 16098692.
15. *Reicks, D., **C. Muñoz-Zanzi**, W. Mengeling, J. Christopher-Hennings, K. Lager, D. Polson, S. Dee, K. Rossow. 2005. Timeline of PRRS virus detection in boars during the first six days after infection. *J Swine Health Prod.* 14:35-41.
16. **Muñoz-Zanzi, C.**, W. Johnson, M. Thurmond. 2006. Factors affecting sensitivity and specificity of pooled-sample testing for diagnosis of low prevalence infections. *Prev Vet Med.* 74: 309-322. PMID: 16427711.
17. *Hermann J, S. Hoff, **C. Munoz-Zanzi**, K.J. Yoon, M.Roof, A. Burkhardt, J. Zimmerman. 2007. Effect of temperature and relative humidity on the stability of infectious porcine reproductive and respiratory syndrome virus in aerosols. *Vet Res.*38:81-93. PMID: 17156739.
18. *Reicks, D., **C. Muñoz-Zanzi**, K. Rossow. A new bleeding technique for routine monitoring of boars for PRRS virus using PCR. *J Swine Health Prod.* 2006;14:258-264.
19. *Mondaca-Fernández,E., T. Meyns, **C. Muñoz-Zanzi**, C. Trincado, RB. Morrison. Experimental quantification of the transmission of porcine reproductive and respiratory syndrome virus. *Can J Vet Res* 2007; 71:157-159. PMID: 17479780; PMCID: PMC1829187

20. *Rovira, A., D. Reicks, **C. Munoz-Zanzi**. Evaluation of surveillance protocols for detecting porcine reproductive and respiratory syndrome virus infection in boar studs by simulation modeling. *J Vet Diagn Invest*. 2007; 19:492-501. PMID: 17823392
21. *Rovira, A. T. Clement, J. Christopher-Hennings, B. Thompson, M. Eagle, D. Reicks, **C. Munoz-Zanzi**. Evaluation of the sensitivity of PCR to detect PRRSV on individual and pooled samples from boars during acute infection. *J Vet Diagn Invest*. 2007; 19:502-509. . PMID: 17823393
22. †Tavornpanich, S., **C. Muñoz-Zanzi**, S. Wells, E. Raizman, I. Gardner. Simulation modeling of testing strategies for initial detection of paratuberculosis-infected herds. *Prev Vet Med*. 2008; 83: 65-82. PMID: 17719108.
23. *Lukas, JM., **C. Munoz-Zanzi**, ML Kinsel, JK Reneau. Bulk tank SCC variation and SPC: Consistency index as a field measure of bulk tank SCC variation. *J Dairy Science*. 2008; 91: 433-441. PMID: 18096968.
24. *Rovira, A., J.P. Cano, **C. Munoz-Zanzi**. Feasibility of pooled-sample testing for the detection of porcine reproductive and respiratory syndrome virus antibodies on serum samples by ELISA. *Vet Microbiol*. 2008; 130:60-68. PMID: 18243590.
25. *Scheffers, J., **C. Munoz-Zanzi**, J.E. Collins, S. M. Goyal, T.R. Ames. Serological evaluation of precolostral serum samples to detect bovine viral diarrhoea virus infections in large commercial dairy herds. *J Vet Diagn Invest* 2008. 20: 625-628. PMID: 18776097.
26. *Hermann, J., **C. Munoz-Zanzi**, J. Zimmerman. A method to provide improved dose-response estimates for airborne pathogens in animals: An example using porcine reproductive and respiratory syndrome virus *Vet Microbiol* 2009. 133:297-302. PMID: 18778902.
27. **Munoz-Zanzi, C.**, D. Trampel, T. Hanson, A. Cortinas, S. Goyal, K. Harrison, D. Lauer. Field estimation of the diagnostic specificity of an ELISA for avian pneumovirus antibodies in turkeys. *J Vet Diagn Invest*. 2009; 2: 240-243. PMID: 19286505.
28. *Rovira A., M. Murtaugh, J. Abrahante, **C. Munoz-Zanzi**. Reverse transcription loop-mediated isothermal amplification for the detection of Porcine reproductive and respiratory syndrome virus. *J Vet Diagn Invest*, 2009; 21: 350-354. PMID: 19407088.
29. Sharkey, L., R. Davies, S. Torres, K. Gjevre, **C. Munoz-Zanzi**. Breed-associated variability in serum biochemical analytes in four large breed dogs. *Vet Clin Pathol*. 2009; 38:375-380. PMID: 19351336.
30. *Lukas,J., J. K. Reneau, R. Wallace, D. Hawkins, **C. Munoz-Zanzi**. A novel method of analyzing daily milk production and electrical conductivity to predict disease onset. *J. Dairy Sci*. 2009; 92:5964–5976. PMID: 19923600.
31. Zimmerman JJ, Jacobs AC, Hermann JR, **Muñoz-Zanzi C**, Prickett JR, Roof MB, Yoon KJ. Stability of porcine reproductive and respiratory syndrome virus at ambient temperatures. *J Vet Diagn Invest*. 2010; 22:257-260. PMID: 20224088.
32. **Muñoz-Zanzi, C.**, P. Fry, B. Lesina, D. Hill. *Toxoplasma gondii* oocyst-specific antibodies and source of infection. *Emerg Inf Dis*. 2010; 16:1591-1593. PMID: 20875286; PMCID: PMC3294384.
33. *Sepúlveda, M., **C. Muñoz-Zanzi** , C. Rosenfeld, C. Jara, K. Pelican, D. Hill. *Toxoplasma gondii* in feral American minks at the Maullin river, Chile. *Vet Parasitol*. 2011; 175:60-65. PMID: 20965660
34. Hill, D., C. Coss, J. P. Dubey, K. Wroblewski, M. Sautter, T. Hosten, **C. Munoz-Zanzi**, E. Mui, S. Withers, K. Boyer, G. Hermes, J. Coyne, F. Jagdis, A. Burnett, P. McLeod, H. Morton, D.

- Robinson, R. McLeod and Toxoplasmosis Study Group. Identification of a sporozoite-specific antigen from *Toxoplasma gondii*. J Parasitol. 2011; 97:328-337. PMID: 21506817; PMCID: PMC3684278.
35. *Raizman, EA, S. Wells, **C. Muñoz-Zanzi**, S. Tavoranpanich. Estimated within-herd prevalence of *Mycobacterium avium* subsp *paratuberculosis* in a sample of Minnesota dairy herds using bacterial culture of pooled fecal samples. Can J Vet Res. 2011; 75:112-116. PMID: 21731181; PMCID: PMC3062920
 36. **Muñoz-Zanzi, C.**, Tamayo R., Balboa, J., Hill, D. Detection of oocyst-associated toxoplasmosis in swine from Southern Chile. Zoonoses Public Health. 2012; 59:389-392. PMID: 23057081.
 37. Davies, P., B. Alexander, J. Bender, J. Deen, C. Dewey, J. Funk, **C. Muñoz-Zanzi**, M. O’Sullivan, R. Singer, S. Sreevatsan, K. Stark, M. Stevenson. Livestock density ad risk factor for livestock-associated methicillin-resistant *Staphylococcus aureus*, The Netherlands. Emerging Infectious Diseases. 2013;19:1551-1552. PMID: 23968678; PMCID: PMC3810905
 38. **Muñoz-Zanzi, C.**, J. Williams-Nguyen. E. Belongia. Sero-prevalence of toxoplasmosis in children from Wisconsin. BMC Public Health. 2013; 13:837. PMID: 24025220; PMCID: PMC3847651
 39. **Munoz-Zanzi, C.** M. Mason, C. Encina, M Gonzalez, S. Berg. Household characteristics associated with rodent presence and *Leptospira* infection in rural and urban communities from Southern Chile. Am J Trop Med Hyg. 2014; 90:497-506. PMID: 24445209; PMCID: PMC3945004
 40. Jancloes, M.; E. Bertherat, C. Schneider, S. Belmain, **C. Munoz-Zanzi**, R. Hartskeerl, F. Costa, J. Denis: Towards a “One Health” Strategy against Leptospirosis. Planet@Risk. 2014; 2: 204-206.
 41. †Allwood, P., **C. Munoz-Zanzi**, M. Chang, P. Brown. Knowledge, perceptions, and environmental risk factors among Jamaican households with a history of leptospirosis. J Infection Public Health. 2014; 7:314-22. PMID: 24816244.
 42. **Muñoz-Zanzi, C.**, M. Mason, C. Encina, A. Astroza, A. Romero. *Leptospira* contamination in household and environmental water in rural communities from southern Chile. J Environ Res Public Health. 2014; 11:6666-6680. PMID: 24972030; PMCID: PMC4113836.
 43. *Sepulveda, M., M. Seguel, M. Alvarado-Ryback, C. Verdugo, **C. Munoz-Zanzi**, R. Tamayo. Post mortem findings in a South American sea lion (*Otaria byronia*) urban colony". J Wildlife Dis. 2015; 51:279-282. PMID: 25380367.
 44. *Linhares, L., M. Yang, S. Sreevatsan, **C. Munoz-Zanzi**, M. Torremorell, P. Davies. The effect of anatomic site and age on detection of *Staphylococcus aureus* in pigs. J Vet Diagn Invest. 2015; 27:55-60. PMID: 25525138.
 45. *Lelu, M., **C. Muñoz-Zanzi**, B. Higgins, R. Galloway. Seroepidemiology of leptospirosis in dogs from rural and slum communities of Los Rios Region, Chile BMC Vet Res. 2015; 11:31. PMID: 25880871; PMCID: PMC4329218
 46. Salgado, M.; B. Otto, M. Moroni, E. Sandoval, G. Reinhardt, S. Boqvist, C. Encina, **C. Munoz-Zanzi**. Isolation of *Leptospira interrogans* serovar Hardjo prajitno from a calf with clinical leptospirosis in Chile. BMC Vet Res. 2015; 11:369. PMID: 25888965; PMCID: PMC4374366
 47. **Muñoz-Zanzi C**, Saavedra F, Otth C, Domancich L, Hott M, Padula P. Serological evidence of hantavirus infection in apparently healthy people from rural and slum communities in southern Chile. Viruses. 2015; 7:2006-13. PMID: 25912713; PMCID: PMC4411687.
 48. *Mason, M., M. Gonzalez, J. Hodges, **C. Munoz-Zanzi**. Protective practices against zoonotic

- infections among rural and slum communities from South Central Chile. *BMC Public Health*. 2015; 15: 713. PMID: 26215091; PMCID: PMC4517625
49. *Espejo, L., F.J. Zagmutt, H. Groenendaal, **C. Muñoz-Zanzi**, S.J. Wells. Evaluation of performance of bacterial culture of feces and serum ELISA across stages of Johne's disease in cattle using a Bayesian latent class model. *J Dairy Science*. 2015; 98:8227-8239. PMID: 26364104.
 50. Schneider, M.C., P. Najera, M. Pereira, G. Machado, C. B dos Anjos, R.O. Rodrigues, G.M, Cavagni, **C. Muñoz-Zanzi**, L. G. Corbellini, M. Leone, D.F. Buss, S. Aldighier, M.A. Espinal. PLoS Neglected Trop Dis. Leptospirosis in Rio Grande do Sul, Brazil: An ecosystem approach in the animal-human interface. *PLOS Neglected Trop Dis*. 2015 12;9(11):e0004095.PMID: 26562157; PMCID: PMC4643048.
 51. *Mimica, F., **C. Munoz-Zanzi**, M. Torres, O. Padilla. Human toxoplasmosis in Chile, a prevalent zoonosis. *Rev Chilena Infectologia*. 2015, 32:541-549. PMID: 26633111.
 52. **Munoz-Zanzi, C.**; C. Campbell, S. Berg. Seroepidemiology of toxoplasmosis in rural and urban communities from Los Rios Region, Chile. *Infect Ecol Epidemiol*. 2016 10;6:30597.PMID: 26968154; PMCID: PMC4788768.
 53. * Mason M.; C. Encina, S. Sreevatsan, **C. Muñoz-Zanzi**. Distribution of pathogenic *Leptospira* in peri-domestic surface waters from South Central Chile. *PLOS Neglected Trop Dis*. 2016 10(8):e0004895 PMID: 27529550
 54. Schneider, C., J. Velasco-Hernandez, K. Min, D. Galan Leonel, D. Baca-Carrasco M. Gompper, **C. Munoz-Zanzi** The use of chemoprophylaxis after floods to reduce the occurrence and impact of leptospirosis outbreaks. *Int J Environ Res Public Health*. 2017, 14: 594. PMID: 28587195, PMCID: PMC5486280 , DOI: 10.3390/ijerph14060594
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 57. Peniche Lara, G., B. Jimenez-Delgadillo, **C. Muñoz-Zanzi**, M. Cardens-Marrufo, C. Pérez-Osorio, J. Arias-Leon. Presence of Rickettsia species in a marginalized area of Yucatan, Mexico. *Journal Tropical Medicine*. 2018 Jun 5;2018:7675828. doi: 10.1155/2018/7675828. eCollection 2018. PMID: 29973957;PMCID: PMC6008815
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 60. Polo, N., G. Machado, R. Rodrigues, P. Nájera Hamrick, **C. Munoz-Zanzi**, M.M Pereira, M. Bercini, Loeci, N. Timm, M.C. Schneider A One Health approach to investigating Leptospira

serogroups and their spatial distributions among humans and animals in Rio Grande do Sul, Brazil, 2013-2015. *Tropical Medicine and Infectious Disease*. 2019, 27:4. pii: E42. doi: 10.3390/tropicalmed4010042. PMID:30818803; PMCID:PMC6473481.

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62. **Munoz-Zanzi, C.** , E. Groene, B. Morawski, K. Bonner, F. Costa, E. Bertherat, MC. Schneider. A systematic literature review of leptospirosis outbreaks worldwide, 1970 to 2012. *Rev Panam Salud Publica*. 2020;44:e78. Published 2020 Jul 15. doi:10.26633/RPSP.2020.78. PMID: 32684917 PMCID: PMC7363284
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65. Schotthoefler, A., K. Stinebaugh, M. Martin, **C. Munoz-Zanzi**. Tickborne disease awareness and protective practices among U.S. Forest Service employees from the Upper Midwest, USA. *BMC Public Health*. 2020 Oct 20;20(1):1575. doi: 10.1186/s12889-020-09629-x. PMID: 33081728; PMCID: PMC7574197
66. *Sponheim A., **C. Munoz-Zanzi**, E. Fano, D. Polson , M. Pieters. Pooled-sample testing for detection of *Mycoplasma hyopneumoniae* during late experimental infection as a diagnostic tool for a herd eradication program. *Prev Vet Med*. 2021 Feb 24;189:105313. doi: 10.1016/j.prevetmed.2021.105313. PMID: 33676323.
67. Convertino, M., A. Reddy, Y. Liu and **C. Munoz-Zanzi**. Eco-epidemiological scaling of Leptospirosis: Vulnerability mapping and early warning forecasts. *Science of The Total Environment*. 2021. Jul 28;799:149102. doi: 10.1016/j.scitotenv.2021.149102. Epub ahead of print. PMID: 34388889.
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70. Belsare, A., M. Gompper, M. Mason, **C. Munoz-Zanzi**. Agents of change: Investigating *Leptospira* dynamics in a multi-host community using an agent-based modeling approach. *Transboundary and Emerging Diseases*. *Transbound Emerg Dis*. 2022 Oct 31;. doi: 10.1111/tbed.14750. [Epub ahead of print] PubMed PMID: 36315387.
71. *Uribe-Restrepo, P., **C. Munoz-Zanzi**, P. Agudelo-Florez. Kidney injury biomarkers in leptospirosis: A review of the literature. *Rev Soc Bras Med Trop*. 2023 Jan 23;56:e0260-2022. doi:

10.1590/0037-8682-0260-2022. PMID: 36700601; PMCID: PMC9870286

72. *Servadio, J, M. Convertino, M. Fiecas, **C. Muñoz-Zanzi**. Forecasting weekly occurrence and incidence of Yellow Fever in Brazil using ecological and meteorological conditions. *PloS Neglected Tropical Diseases*. *In Review*.
73. Arroyo Solis, JJ., **C. Munoz-Zanzi**, S. Berg, F. Arias Leon, F. Puerto Manzano, K. Dzul. Characterizing mobility patterns using GPS data loggers and a self-reported mobility survey in a Mayan community during the COVID-19 pandemic. *In Review*.
74. **Munoz-Zanzi, C.** , M. Mueller, C. Rivera, N. Coriano, R. Rivera-Gutierrez, R. Galloway, A. Kircher, D. Hallman, L. Martinez, H. Walke, I.J. Schafer. Epidemiological and clinical description of leptospirosis cases identified through hospital-based active surveillance in Puerto Rico, 2019-2021. *Am J Trop Med Hyg*. *In progress*.
75. Richardson B., **C. Munoz-Zanzi**, M. Mueller, C. Rivera, N. Coriano, R. Rivera-Gutierrez, R. Galloway, A. Kircher, H. Walke, I.J. Schafer, C. Atherstone. Risk factors and epidemiology of leptospirosis among febrile illness patients seeking care the emergency room in Puerto Rico, 2019-2021. *In progress*.
76. Petras, J., C. Atherstone, M. Mueller, C. Rivera, N. Coriano, R. Rivera-Gutierrez, A. Kircher, H. Walke, I.J. Schafer, **C. Munoz-Zanzi**. Detection and description of melioidosis cases identified through serologic investigation of acute febrile patients in Puerto Rico. *In progress*.
77. *Yasir, A. Richardson B., M. Mueller, S. L.S. Ramos, N. Jally, N. Coriano, R. Rivera-Gutierrez, R. Galloway, A. Kircher, H. Walke, I.J. Schafer, C. Atherstone, **C. Munoz-Zanzi**. Community level description of leptospirosis in domestic animals, rodents and mongooses from Puerto Rico. *In progress*.
78. *Uribe-Restrepo, P. J. Perez-Garcia, M. Arboleda-Naranjo, C. Munoz-Zanzi, P. Agudelo-Florez. Clinical presentation of human leptospirosis in febrile patients: Urabá, Colombia. *In progress*.

* indicates papers from advisee/student. † indicates paper as a coauthor with major contribution in statistical analysis and manuscript writing.

Book chapters

“One Health from concept to application in the global world”. M.C. Schneider, **C. Munoz-Zanzi**, K. Min, S. Aldighieri. In: *Global Public Health*. Oxford Research Encyclopedias. Oxford University Press. Published online 2019. <https://doi.org/10.1093/acrefore/9780190632366.013.29>

“Ecosystems and Infectious Diseases” M.C. Schneider, R. Pereira Igreja, M. Santini de Oliveira, C. Munoz-Zanzi. In: *Ecosystem change and public health*. Johns Hopkins University Press. *In progress*.

Invited presentations

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| April, 2002 | USDA/NADC - IICAB Meeting: Detecting and Controlling BVDV infections. Ames, Iowa. “Assessment of bovine viral diarrhea congenital infection in dry-lot dairy cattle under field management conditions”. |
| October, 2002 | 83 rd Fall Conference for Veterinarians. Continuing Education and Extension Program. College of Veterinary Medicine, University of Illinois at Urbana-Champaign, Urbana, IL. “Diagnosis, impact, and control of bovine viral diarrhea virus in US herds”. |

- April, 2004 Bovine Viral Diarrhea Virus in the Americas. A Symposium for Researchers, Veterinary Practitioners, and Dairy Producers. University of California, Davis, CA. “Quantification, risk factors, and health impacts of congenital infection with bovine viral diarrhea virus in dairy herds”.
- September, 2004 2004 Lemna Conference (Continuing education of swine practitioners), Minneapolis, MN. “Sampling strategies and serology challenges pre-PRRS eradication”.
- September, 2004 2004 Lemna Conference (Continuing education of swine practitioners), Minneapolis, MN. “Investigation and impact of PRRS ELISA false positive results – what to do?”
- November, 2004 “Porcine Reproductive and Respiratory Disease: Methods for the integrated control, prevention and elimination of PRRS in United States Swine Herds (NC229)”. Chicago, IL. “Pathogen transmission in populations: Principles and applications”.
- November, 2004 13th Chilean Conference in Veterinary Medicine. Valdivia, Chile. “Role of the veterinary diagnostic laboratory in animal disease control”
- December, 2005 PRRS International Symposium, St. Louis MO. “Modeling the within-herd dynamics of PRRS infection: early detection of infection and evaluation of herd immunity”.
- October, 2006 AAVLD pre-conference symposium “Sampling for detection of disease”. October 12, 2006. Minneapolis, MN. “A pooling approach to sampling”
- December 2007 AAVLD annual meeting, Epidemiology Section, Reno, NV. “Use of pooling in disease diagnosis”.
- April 2011 Research and Policy for Infectious Disease Dynamics, Program Pathogen Emergence Working Group: Transmission dynamics of leptospirosis. Los Angeles, CA. “Role of the environment and animal interface in dynamics of *Leptospira* infection”.
- September 2011 7th Meeting of the International Leptospirosis Society, Merida, Mexico. “Eco-epidemiology of leptospirosis in Latin America”.
- March 2012 NSF/NIH Evolution and Ecology of Infectious Diseases, Berkeley, CA. “Human and animal seroprevalence of leptospirosis in rural and slum communities from southern Chile”.
- August 2012 Marshfield Clinic Research Foundation, Epidemiology Research Center. Marshfield, WI. “Source attribution and health impact of toxoplasmosis”.
- August 2012 PAHO Meeting of Central American countries with frequent leptospirosis outbreaks. Managua, Nicaragua. “Studies on the eco-epidemiology of leptospirosis”.
- March 2013 Global Leptospirosis Action Network – WHO/PAHO, Brasilia, Brazil. “Systematic literature review of leptospirosis outbreaks” and “Eco-epidemiology of leptospirosis in Latin America”.
- April 2013 College of Veterinary Medicine Seminar Series, University of Minnesota. St. Paul, MN. “The eco-epidemiology of leptospirosis, a neglected disease”.
- April 2013 Conservation Ecology Graduate Program Seminar Series, University of Minnesota, St. Paul, MN. “Zoonotic disease transmission in distinct socio-ecological systems; leptospirosis as an example”.

- August 2013 XVI XLIX Congress of the Brazilian Society of Tropical Medicine. Campo Grande, Brazil. Leptospirosis Special Symposium. “Eco-epidemiology of leptospirosis in rural Chile”.
- November 2013 2nd One Health Summit, Global Risk Forum. Davos, Switzerland. “Drivers of leptospirosis transmission at the human-animal interface in distinct community types”.
- December 2013 International Conference Climate Services 3. Special session: The role of climate in disease decision support systems. Montego Bay, Jamaica. “Leptospirosis as a global threat for both animals and humans: The GLEAN Story”.
- January 2014 Tropical and Travel Medicine Series. Special Session on One Health. Medical School, University of Minnesota. “Global Leptospirosis Environmental Action Network: A One Health Story”.
- November 2014 63rd Annual Meeting of the American Society of Tropical Medicine and Hygiene. Symposium: Leptospirosis at the Human:Animal Interface. “Eco-epidemiology of leptospirosis: A One Health perspective”. November 2-6, 2014. New Orleans.
- November 2014 4th Annual Meeting of the Global Leptospirosis Environmental Action Network (GLEAN). “Modeling approaches for leptospirosis”. November 18-20, 2014. Colombo, Sri Lanka.
- March 2015 Environmental Health Sciences Seminar Series, School of Public, University of Minnesota. “Controlling zoonoses at the human-animal interface, the need for an ecological and social perspective”. Minneapolis, MN
- August 2015 Eco-epidemiology of zoonoses in Los Rios Region, Chile: Toxoplasmosis, leptospirosis and hantavirus. School of Medicine, Seminar Series. Universidad Austral de Chile. Valdivia, Chile.
- October 2015 9th International Leptospirosis Society Meeting. “Leptospirosis outbreak investigation”. October 7-10, 2015 Semarang, Indonesia
- November 2015 International Workshop of the Oswaldo Cruz Institute/FIOCRUZ for Leptospirosis Research Based on Country Needs & 5th Global Leptospirosis Environmental Action Network (GLEAN) Meeting. “Prediction in leptospirosis, Research and Action”. November 10-12, 2015. Rio de Janeiro, Brazil.
- April 2016 “The unrecognized global burden of leptospirosis; advances and challenges in diagnosis and control.” Pediatric Grand Rounds, Medical School, University of Minnesota. Minneapolis, MN.
- October 2016 “*Leptospira* and the environment”. 6th GLEAN Technical Meeting, Selangor, Malaysia.
- October 2016 “Leptospirosis outbreaks”. 6th GLEAN Technical Meeting, Selangor, Malaysia.
- January 2017 “Epidemiology of Leptospirosis” 3M Pediatrics Seminar Series. Medical School. University of Minnesota, Minneapolis, MN.
- November 2017 “Use of modeling to examine leptospirosis transmission dynamics”. Workshop on leptospirosis prevention and control and GLEAN meeting. October 30 – November 2, 2017 Kathmandu, Nepal.
- November 2017 “The use of chemoprophylaxis after floods to reduce the occurrence and impact of leptospirosis outbreaks”. Workshop on leptospirosis prevention and control and GLEAN meeting. October 30 – November 2, 2017 Kathmandu, Nepal.

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- January 2018 “Ecological, Social, and Epidemiological Elements of Leptospirosis Transmission at Varying Scales”. Gordon Conference on the Biology of Spirochetes. January 21-26, 2018. Ventura, California.
- April 2018 “Tickborne disease awareness and protective practices among U.S. Forest Service workers from the Midwest”. CNNF Ticks and Tick Borne Diseases Workshop. April 4th, 2018 (Webinar).
- April 2019 “Leptospirosis, updated on status globally and in the LAC region”. One Health Conference. Health Solutions Fair, One Health for a Healthy and Sustainable Region. April 23, 2019. Porto Alegre, Brazil.
- April 2020 “Leptospirosis research and control through a One Health lens”. 2nd Symposium of Public Health: One Health. CES University, Medellin, Colombia.
- July 2020 “Leptospirosis epidemiology, global update” and “Leptospirosis surveillance”. Leptospirosis surveillance and control training workshop. Indonesia Ministry of Health. Online workshop for public health workers. Jakarta, Indonesia.
- April 2021 “Global environmental challenges as amplifiers of health disparities – Examples from infectious diseases of poverty”. Seminar Series, Department of climate, soil and water, CFANS, University of Minnesota.
- April 2021 “How various health professionals can work together towards preventing the next pandemic”. Discussion Panel organized by the Global Health Student Advisory Board, hosted by the Center for Global Health and Social Responsivity, University of Minnesota.
- November 2021 “One Health approach to zoonosis control: Leptospirosis”. 2nd International Seminar Postgraduate Program in Parasitic and Infectious Diseases (PPGDIP), “One Health: Environmental Degradation and Infectious Diseases”, Medicine School of the Federal University of Rio de Janeiro (UFRJ).
- March 2022 “Rodent surveillance for leptospirosis: Case studies”. Training Workshop on rodent sentinel surveillance for the Indonesia Ministry of Health organized by WHO SEARO/WHO Indonesia.
- April 2022 “Sentinel surveillance for human leptospirosis”. Training Workshop on surveillance for leptospirosis for the Indonesia Ministry of Health organized by WHO SEARO/WHO Indonesia
- March 2023 “Strategies for human and animal surveillance”. WHO Public Health Laboratories Webinar Series, Epidemiology and diagnostic testing for leptospirosis, an emerging public health problem.

Presentations at scientific conferences (as first author)

- October, 1999 American Association of Veterinary Laboratory Diagnosticians. 42nd Annual Meeting. San Diego, CA.
“Detection of Bovine Viral Diarrhea Virus (BVDV) persistently infected cattle using pooled-sample testing”.
- November, 1999 Conference of Research Workers in Animal Diseases. 80th Annual Meeting. Chicago, IL.
“Development of cost-efficient pooled-sample testing protocols to detect Bovine viral diarrhea virus persistently infected cattle”.
- August, 2000 IX International Symposium of Veterinary Epidemiology and Economics. Breckenridge, CO.

- “Pooled-sample testing to diagnose low prevalence diseases: sensitivity and specificity issues”.
- October, 2000 American Association of Veterinary Laboratory Diagnosticians. 43rd Annual Meeting. Birmingham, AL.
“A simulation model to assess the effect of age at vaccination on transmission of bovine viral diarrhoea virus in dairy heifers”.
“Sensitivity and specificity of pooled sample testing for diagnosis of low prevalence diseases”.
- November, 2000 Conference of Research Workers in Animal Diseases. 81st Annual Meeting. Chicago, IL.
“Modeling of post-natal transmission of bovine viral diarrhoea virus in dairy heifers and effect of age at vaccination”.
- November 2001 American Association of Veterinary Laboratory Diagnosticians. 44th Annual Meeting. Hershey, Pennsylvania.
“Characterization of bovine viral diarrhoea virus congenital infection in dairy herds under field conditions”.
- April 2002 USDA/NADC - IICAB Meeting: Detecting and Controlling BVDV infections. Ames, Iowa.
“Field evaluation of serum virus isolation, RT-PCR, and immunohistochemistry to detect BVDV PI animals”.
- November, 2002 Conference of Research Workers in Animal Diseases. 83rd Annual Meeting. Saint Louis, MO.
“Field performance and cost effectiveness of skin biopsy IHC, RT-PCR, and serum virus isolation to detect BVD virus persistently infected animals”.
- October, 2003 American Association of Veterinary Laboratory Diagnosticians. 46th Annual Meeting. San Diego, California.
“Epidemiological evaluation of the performance of assay for detection of bovine viral diarrhoea virus infection”.
- November, 2003 10th International Symposium of Veterinary Epidemiology and Economics. 17th – 21st November, Viña del Mar, Chile.
“Bayesian update of expert opinion on the performance of assays for identification of bovine viral diarrhoea infected animals.”
- October, 2004 American Association of Veterinary Laboratory Diagnosticians. 47th Annual Meeting. Greensboro, North Carolina.
“Cost-effectiveness of sampling and testing strategies for detection of Johne’s infected dairy herds”.
- December 2008 First International Conference on Infectious Disease Dynamics, Monterey, California.
“Evaluation of the effectiveness of screening programs for congenital toxoplasmosis using simulation modeling”.
- September 2009 Sixth Conference of the International Leptospirosis Society, Cochin, India.
“Estimation of sensitivity and specificity of screening tests for leptospirosis in traditionally low risk populations”
- March 2010 NIH/NSF Ecology and Evolution of Infectious Diseases, Atlantic City, New Jersey.
“Eco-epidemiology of leptospirosis in Latin America: Pilot study results”.
- July 2010 International Conference of Emerging Infectious Diseases. Atlanta, GA.

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- “Source attribution of *Toxoplasma gondii* infection by detection of oocyst-specific antibodies”.
- March 2011 NIH/NSF Evolution and Ecology of Infectious Diseases, Madison, WI.
“Eco-epidemiology of leptospirosis in Latin America: Study populations”.
- March 2012 NIH/NSF Evolution and Ecology of Infectious Disease, Berkeley, CA.
“*Leptospira* contamination of the peri-domestic environment in households from rural and slum communities in southern Chile”.
- March 2012 NIH/NSF Evolution and Ecology of Infectious Disease, Berkeley, CA.
“Human and animal sero-prevalence of leptospirosis in rural and slum communities from southern Chile”.
- October 2013 8th Meeting International Leptospirosis Society. Fukuoka, Japan.
“*Leptospira* contamination in water from the peri-domestic environment in rural and slum communities from Chile”.
- October 2015 9th International Leptospirosis Society Meeting. “Eco-epidemiology of leptospirosis in different community settings, a One Health approach”. October 7-10, 2015, Semarang, Indonesia.

Presentations at scientific conferences (as co-author)

- October, 2004 American Association of Veterinary Laboratory Diagnosticians. 47th Annual Meeting. Birmingham, AL.
S. Tavorpanich, **C. Muñoz-Zanzi**, I. Gardner, E. Raizman, S. Wells “Cost-effectiveness of sampling and testing strategies for detection of Johne’s infected dairy herds”.
- November, 2005 American Association of Veterinary Laboratory Diagnosticians. 48th Annual Meeting. Hershey, PA.
Rovira, A. **C. Munoz-Zanzi**. “Evaluation of sampling and testing strategies for monitoring PRRS infection in boar studs”.
- November, 2006 International PRRS Symposium, 2006. Chicago, IL, USA
A. Rovira, T. Clement, J. Christopher-Hennings, **C. Munoz-Zanzi**, K. Rossow, N. Loskutoff, E. Nelson, B. Thompson, M. Engle, D. Reicks, M. Murtaugh, J. Lunney. “PRRSV surveillance, elimination and immunity in boars and boar semen”.
- March 2007 2007 International PRRS ymposium, Orlando, Fl.
A. Rovira, T. Clement, J. Christopher-Hennings, **C. Munoz-Zanzi**, K. Rossow, N. Loskutoff, E. Nelson, B. Thompson, M. Engle, D. Reicks, M. Murtaugh, J. Lunney. “Evaluation of the sensitivity of PCR to detect PRRSV acute infection in boars”.
- March 2007 American Association of Swine Veterinarians, Orlando, FL.
Hermann J, **Muñoz-Zanzi CA**, Yoon K-J, Zimmerman J. “Susceptibility of young pigs to PRRSV infection by aerosol route of exposure. “
- November 2009 10th International Mammal Congress, Mendoza, Argentina.
M. Sepulveda, R. Jara, C. Rosenfeld, D. Gonzalez-Acuna, **C. Munoz-Zanzi**, K. Pelican. “Disease and ecological aspects in alien American mink (*Neovison vison*) at the Maullin River, Chile”
- July 2010 21st International Pig Veterinary Society Congress, Vancouver, Canada.
J. Cano, S. Dee, A. Rovira, **C. Munoz-Zanzi**, S. Anil, R. Morrison. “Targeted sampling for enhancing the detection of PRRS virus infection in suckling piglets”.
- July 2010 21st International Pig Veterinary Society Congress, Vancouver, Canada.

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- J. Cano, S. Dee, A. Rovira, **C. Muñoz-Zanzi**, S. Anil, R. Morrison. “PRRS virus vertical transmission dynamics in a sow herd”.
- September 2010 College of Veterinary Medicine Research Days: 2009 Summer Scholars. L. Hornickel, **C. Muñoz-Zanzi**, L. Neils, E. Belongia. “Evaluation of diagnostic tests and estimation of sero-prevalence for *Leptospira* antibodies in humans in traditionally low risk populations”.
- November 2010 XXVI World Buiatrics Congress 2010. Santiago, Chile. P. Gadicke, G. Maldonado, G. Monti, **C. Muñoz-Zanzi**. “Role of common infectious diseases in pregnancy loss of heifers from large intensively managed dry-lot dairies.”
- March 2011 NSF/NIH Evolution and Ecology of Infectious Diseases, Madison, WI. M. Mason, **C. Muñoz-Zanzi**, H. Chu, L. Petersen, L. Hornickel. “Evaluation of the diagnostic accuracy of serologic assays for diagnosis of leptospirosis in low-prevalence populations”.
- March 2011 NSF/NIH Evolution and Ecology of Infectious Diseases, Madison, WI. B. Higgins, **C. Muñoz-Zanzi**, M. Mason. “Association of household characteristics and presence of pathogenic *Leptospira* in the environment”
- October 2011 American Public Health Association’s 139th Annual meeting, Washington DC. M. Mason, **C. Muñoz-Zanzi**. “Identification of *Leptospira* strains and modeling of interaction between animal and human hosts and the environment”.
- October 2011 American Public Health Association’s 139th Annual meeting, Washington DC. M. Mason, H. Chu, **C. Muñoz-Zanzi**. “Diagnostic accuracy of MAT and ELISA assays in the detection of *Leptospira* in two, low-prevalence, populations”.
- November 2011 XXIX Jornadas Chilena de Salud Publica. Santiago, Chile. D. Pinones, **C. Muñoz-Zanzi**, R. Tamayo. “Sero-prevalence of toxoplasmosis in cats from Valdivia, Chile”.
- March 2012 International Conference of Emerging Infectious Diseases, Atlanta, GA. M. Mason, M. Gonzalez, C. Encina, G. Acosta, **C. Muñoz-Zanzi**. “Household characteristics associated with rodent presence and *Leptospira* infection in three communities setting in Chile”.
- March 2012 International Conference of Emerging Infectious Diseases, Atlanta, GA. J. Williams-Nguyen, **C. Muñoz-Zanzi**. “Seroprevalence of leptospirosis and toxoplasmosis in children from Wisconsin”.
- March 2012 International Conference of Emerging Infectious Diseases, Atlanta, GA. M. Rolfes, F. Guerra, P. Fry, R. Tamayo, **C. Muñoz-Zanzi**. “Knowledge and risk factors of congenital infection among Chilean women”
- June 2012 45th Annual Society for Epidemiologic Research Meeting, Minneapolis, MN. M. Mason, M. Gonzalez, C. Encina, G. Acosta, **C. Muñoz-Zanzi**. “Household characteristics associated with rodent presence and *Leptospira* infection in three communities setting in Chile”.
- March 2013 NIH/NSF Evolution and Ecology of Infectious Diseases Annual Meeting, Athens, GA. S. Berg, M. Gonzalez, M. Diuk-Weisser, **C. Muñoz-Zanzi**. “Spatial epidemiology of leptospirosis in urban communities from Los Rios, Chile”.

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- March 2013 NIH/NSF Evolution and Ecology of Infectious Diseases Annual Meeting, Athens, GA. M. Mason, C. Encina, S. Srivatsaan, M. Gonzalez, **C. Muñoz-Zanzi**. “Leptospirosis in the peri-domestic environment”.
- October 2013 8th Meeting International Leptospirosis Society. Fukuoka, Japan. M. Lelu, B. Higgins, R. Galloway, M. Gonzalez, G. Heyl, **C. Muñoz-Zanzi**. “Sero-epidemiology of canine leptospirosis in rural and slum communities from southern Chile”
- April 2014 Annual Meeting of the Chilean Society of Parasitology, Santiago, Chile. F. Mimica, **C. Muñoz-Zanzi**, O. Padilla. “Toxoplasmosis in pregnant women from Los Rios Region, Chile.”
- October 2015 9th International Leptospirosis Society Meeting. A. Reddy, Y. Liu **C. Muñoz-Zanzi**, M. Convertino. “Stochastic Dynamics of Leptospirosis: Early Warning & Portfolio Management Model” October 7-10, 2015, Semarang, Indonesia.
- April 2017 Upper Midwest Agricultural Safety and Health Center Symposium. K. Stinebaugh, A. Schotthoefer, R. Walker, **C. Muñoz-Zanzi**. “Tickborne Disease knowledge, attitudes, and practices among U.S. Forest Service workers”. Minneapolis, Minnesota.
- April 2017 Upper Midwest Agricultural Safety and Health Center Symposium. R. Walker, **C. Muñoz-Zanzi**, A. Schotthoefer. “Characterizing the epidemiology of positive Lyme confirmatory tests in north-central Wisconsin: 2000-2015”. Minneapolis, Minnesota.
- June 2017 Society for Epidemiologic Research Annual Meeting. Seattle, WA. R. Walker, A. Schotthoefer, **C. Muñoz-Zanzi**. “Characterizing the epidemiology of positive Lyme confirmatory tests in north-central Wisconsin: 2000-2015”.
- September 2017 International Conference on Urban Health. “The role of dogs in the transmission dynamics of leptospirosis in slum communities: An agent-based model”. M. Mason, M.E. Gompper, J. Velasco-Hernandez, S.M. Lenhart, J.E. Nally, A.V. Belsare, A. Previtali, and **C. Muñoz-Zanzi**. Coimbra, Portugal.
- November 2017 10th International Leptospirosis Society Meeting. “A Road Map for Leptospirosis Research and Health Policies Based on Country Needs in Latin America” M.M. Pereira, M.C. Schneider, C. Muñoz-Zanzi, F. Costa, J. Benschop, R. Hartskeerl, M. Jancloes, E. Bertherat. 27 November – 1 December, 2017. Palmerston North, New Zealand.
- October 2018 Cost-Effectiveness Analysis of Clinical Management Strategies for Undifferentiated Febrile Illness in the Era of Responsible Antibiotic Use Z. Zhang, D. Negoescu, **C. Muñoz-Zanzi**. SMDM 40th Annual Meeting. October 13-17, 2018. Montreal, Canada.
- January 2019 Developing a real-time forecasting model for Yellow Fever in South America. J. Servadio, M. Fiecas, M. Convertino, A. Rivière-Cinamond, **C. Muñoz-Zanzi**, Health Research Conference. January 17-18, 2019, New Delhi, India.
- April 2019 “Characterizing leptospirosis vulnerability in Puerto Rico”. A. Rau, **C. Muñoz-Zanzi**, J. Berman. Research Day, School of Public Health, University of Minnesota. April 11, 2019, Minneapolis, Minnesota.
- July 2019 “When and What to Test for: A Cost-Effectiveness Analysis of Test-and-Treat Strategies for Undifferentiated Febrile Illness in the Era of Responsible Antibiotic Use”. A. Zhang, D. Negoescu, **C. Muñoz-Zanzi**, 11th International Leptospirosis Society Conference, July 8-12 2019, Vancouver, Canada.

August 2022 “Multilevel analysis for toxoplasmosis risk factors in different community types from southern Chile.” S. Berg., **C. Muñoz-Zanzi**. International Conference on Emerging Infectious Diseases. August 7-10, 2022 Atlanta, Georgia.

Teaching and other training activities

Classroom teaching

1. Veterinary Public Health (DVM curriculum). Instructor. College of Veterinary Medicine, University of Concepcion, Chillan, Chile. 2nd semester, 1994.
2. Principles of epidemiology (Graduate level course). Co-instructor. College of Veterinary Medicine, University of Illinois. Fall 2002.
3. Veterinary Clinical Epidemiology (CVM 6220, DVM curriculum). Co-instructor and course coordinator. College of Veterinary Medicine, University of Minnesota. Fall 2004 and 2005.
4. Diagnostic Epidemiology of Infectious Diseases (VMED 5082). Instructor. University of Minnesota. Spring 2006.
5. Diagnostic Epidemiology. First International School of Public Health and Food Safety. Universidad Austral de Chile, Valdivia, Chile. January 2007. One-week course on epidemiologic methods for diagnosis of infectious diseases in populations.
6. Long-distance learning for doctorate students. Quantitative methods in epidemiology: Logistic regression module. Universidad Austral de Chile, Valdivia, Chile. July 2006, July 2009.
7. Global Health Course, School of Medicine, University of Minnesota. Lecturer. Summer 2008-2010.
8. Epidemiologic and Modeling Methods for Infectious Diseases (PubH 6390). Co-instructor. University of Minnesota. May Session 2009.
9. Epidemiology Methods II (PubH 6342). Co-instructor. University of Minnesota. Spring 2008-2017.
10. Computer Skills in Public Health Settings (PubH 6107), University of Minnesota. Spring 2015-Present.
11. Foundations of Global Health (PubH 6108), University of Minnesota. Fall 2016-Present.
12. Global Health Capstone (PubH 6004), University of Minnesota. Spring 2022-Present.
13. Excel skills in public health settings (one line module). Interdisciplinary Research Leaders Program, Division of Epidemiology, School of Public Health, University of Minnesota (December 2021)
14. Implementation research in low-resource settings. Short course. Universidad CES, Medellín, Colombia (October 2022).

Organization of Workshops and other Scientific Meetings

1. Symposium on Sampling Methods for Disease Detection, American Association of Veterinary Diagnosticians annual meeting (November 2006). Role: Organizing Committee Chair.
2. Regional Workshop on Diagnosis and Profiling of Leptospirosis. Universiti Putra Malaysia (February 2014). Role: Co-Instructor.
3. Leptospirosis Modeling: A National Institute for Mathematical and Biological Synthesis Investigative Workshop (June 2014). Role: Co-Organizer.
4. Toxoplasmosis Working Group, National Institute for Mathematical and Biological Synthesis (NIMBios) (2012 – 2014), Role: member.
5. Leptospirosis Modeling Working Group, National Institute for Mathematical and Biological Synthesis (NIMBios) (2014-2017). Role: Co-leader.
6. Leptospirosis Epidemiology and Diagnosis Training Workshop. WHO/GLEAN, Selangor, Malaysia. (October 2016). Role: Co-leader.
7. International Leptospirosis Society. October 2017, New Zealand. Role: Organizing Committee Member.

8. Global Leptospirosis Environmental Action Network (GLEAN) Annual Meeting. WHO SEARO/Nepal Ministry of Health. Nepal October 2017. Role: Co-leader.
9. Leptospirosis Training Workshop and Global Leptospirosis Environmental Action Network (GLEAN) Annual Meeting. WHO SEARO/Indonesia Ministry of Health. Bali, November 2019. Role: Co-leader.
10. III Latin American Congress of Animal Leptospirosis. Session: Epidemiology, zoonotic and public health aspects. November 2021. Role: Session chair.

Student advising

Currently active

Advisee name	Degree	Major	Advisor role	Expected
Ammar Yasin	PhD	Environmental Health Sciences	Advisor	May 2026
Taiwo Aremu	PhD	Environmental Health Sciences	Advisor	May 2024
Alexa Steiber	PhD	Epidemiology	Co-advisor	May 2024
Erin Mann	PhD	Epidemiology	Co-advisor	May 2024
Pablo Uribe	DSc	Health Sciences#	Committee member	Dec 2024
Amanda Sponheim	PhD	Veterinary Medicine	Committee member	May 2023
Prabana Balapuwaduge	PhD	Environmental Health Sciences	Committee member	May 2024
Benedict Khoo	PhD	Environmental Health Sciences	Committee member	May 2024
Leah Costik	PhD	Political science/global health minor	Committee member	May 2024
Chekwube Obianyoye	MPH	Environmental Health Sciences	Academic advisor	May 2024
McKenna Haas	MPH	Environmental Health Sciences	Academic advisor	May 2024

#Universidad CES, Medellin, Colombia

Former

Name	Degree	Role	Completion
Rachel Mansk	MPH Environmental Health Sciences	ILE advisor	April 2023
Fabio Neves Souza	Doctorate in Ecology	External committee member	April 2023
Jaime Rich	MPH Environmental Health Sciences	ILE advisor	April 2023
Laurel Cederberg	MPH Maternal and Child Health	ILE advisor	December 2022
Caitlin Spooner	MPH Epidemiology	ILE advisor	December 2022
Store Karas	MPH Public Health Practice	APEX preceptor	August 2022

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James Gaffney	MPH Public Health Practice	ILE advisor	October 2022
Hodan Hachi	MPH Environmental Health Sciences	ILE advisor	May 2022
Mary Gromek	MPH Environmental Health Sciences	Academic advisor	May 2022
Zack Stern	MPH Environmental Health Sciences	ILE advisor	May 2022
Rebecca Schoenecker	MPH Environmental Health Sciences	Academic advisor	May 2022
Corina Tibbits	MPH Environmental Health Sciences	Academic advisor	July 2021
Hajira Wehelie	MPH Environmental Health Sciences	ILE advisor	May 2021
Meredith Arpey	MPH Environmental Health Sciences	Academic advisor	May 2021
Emily Neuhart	MPH Environmental Health Sciences	Academic advisor	May 2021
Anna Stadelman	PhD Epidemiology	Co-advisor	March 2021
Katie Stinebaugh	MPH Epidemiology	Project advisor	December 2020
Priyanka Chaduvula	MPH Environmental Health Sciences	Academic advisor	July 2020
Austin Rau	MPH Environmental Health Sciences	Committee member	July 2020
Joe Servadio	PhD Environmental Health Sciences	Co-Advisor	July 2020
Mateo Frumholtz	MPH Public Health Practice	Committee member	May 2020
Rene Ramirez Garcia ⁴	PhD Health Sciences	Committee member	June 2020
Natalie Bontrager	MPH Environmental Health Sciences	Project advisor	September 2019
Hannah Volkman	PhD Environmental Health Sciences	Advisor	May 2019
Irene Bueno	PhD Veterinary Medicine	Committee member	October 2018
Nidhi Ghildayal	PhD Health Decision Sciences	Committee member	September 2018
Rachel Sweet	MPH Environmental Health Sciences	Project advisor	June 2018
Ian Miller	MPH Epidemiology	Project advisor	October 2017
Anna Lintelmann	MPH Epidemiology	Academic advisor	June 2017
Samantha Saykao	MPH Epidemiology	Academic advisor	June 2017
Tess Peterson	MPH Epidemiology	Academic advisor	May 2017
Kayla Hanson	MPH Epidemiology	Academic advisor	May 2017
Bozena Morawski	PhD Epidemiology	Co-Advisor	March 2017
Meghan Mason	PhD Epidemiology	Advisor	December 2016
Kate Williams	MPH Epidemiology	Project advisor	September 2016
Nandita Mirajkar	PhD Veterinary Medicine, Public Health minor	Committee member	September 2016

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Grace McCauley	MPH Maternal and Child Health	Project advisor	September 2016
Allison Schlak	MPH Epidemiology	Project advisor	August 2016
Annastasia Gross	MPH Epidemiology	Academic advisor	August 2016
Megan Heineman	MPH Environmental Health	Committee member	June 2016
Andres Diaz	PhD Veterinary Medicine	Committee member	October 2015
Karen Hamre	PhD Epidemiology	Committee member	October 2015
Rebecca Kruc	MPH Epidemiology	Committee member	June 2015
Alexandra Boland	MPH Epidemiology	Academic advisor	May 2015
Jincheng Zhou	Research fellow	Supervisor	December 2014
Maud Lelu	Post-doctoral fellow	Mentor	September 2014
Chris Campbell	MPH Epidemiology	Project advisor	August 2014
Ashley Bekolay	MPH Environmental Health	Project advisor	August 2014
Matt McFalls	MPH Epidemiology	Project advisor	July 2014
Opeyemi Gbadamosi	MPH Environmental Health	Committee member	June 2014
Hannah Fox	MPH Maternal and Child Health	Project advisor	June 2014
Gabrielle Quiggle	MPH Epidemiology	Committee member	June 2014
Sarah Blau ¹	B.S. Global Health Concentration	REU Mentor/Project advisor	May 2014
Francisco Mimica ³	MSc Epidemiology	Co-advisor	April 2014
Krithika Rupna	MPH Maternal and Child Health	Project advisor	December 2013
Farides Saavedra	MSc Microbiology	Committee member	December 2013
Melissa Wolfes	PhD Epidemiology	Advisor	October 2013
Aderonke Gbadebo	MPH Epidemiology	Academic advisor	October 2013
Leticia Monteiro	MSc Veterinary Medicine	Committee member	August 2013
Dongsul Kim	MPH Epidemiology	Project advisor	August 2013
Laura Grangaard	MPH Epidemiology	Academic advisor	July 2013
Lauren Lamers	MPH Epidemiology	Academic advisor	July 2013
Max Sepulveda	PhD Veterinary Medicine	Committee member	July 2013
Claude Betene	MPH Epidemiology	Academic advisor	June 2013
Brooke Higgins	B.S. College Biological Sciences	Honors thesis advisor	May 2013
Pratha Muthia	MPH Community Health Promotion	Academic advisor	May 2013
Emily Hallberg	MPH Epidemiology	Academic advisor	May 2013
Stephanie Shulman	MPH Epidemiology	Academic advisor	November 2012
Cesar Bauza ²	DVM	Thesis external advisor	November 2012
Danika Vercimak	MPH Epidemiology	Academic advisor	September 2013
Casey Gradick	MPH Epidemiology	Project advisor	August 2012
Jessica Williams-Nguyen	MPH Epidemiology	Project advisor	June 2012
Luis Espejo	PhD Veterinary Medicine, Epidemiology minor	Committee member	January 2012
Brooke Higgins	B.S. CBS	UROP advisor	January 2012

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Susan Vargas	MPH Veterinary Public Health	Committee member	July 2011
Dayan Pinones ²	DVM	Thesis co-advisor	March 2011
Cyndy Adams	MPH Veterinary Public Health	Project advisor	February 2011
Anil Sukumaran	MPH Epidemiology	Academic advisor	January 2011
Jorge Balboa ²	DVM	Thesis co-advisor	March 2011
Katie Tastad	MPH Epidemiology	Project advisor	October 2010
Kristin Shaw	MPH Epidemiology	Project advisor	September 2010
Oge Alozie	MPH Epidemiology	Committee member	August 2010
Kristofer Hall	MPH Epidemiology	Academic advisor	May 2010
Mary Mauzy	MPH Epidemiology	Project advisor	April 2010
Chris Tate	MPH Epidemiology	Project advisor	November 2009
Paula Gadicke ²	DSc Veterinary Medicine	Committee member	September 2009
Lindsey Hornickel	DVM	NIH T35 mentor	September 2009
Seth Baker	MPH Veterinary Public Health	Academic advisor	June 2009
Sudhir Kumar	MPH Epidemiology	Committee member	April 2009
Trisha McDonald	MPH Epidemiology	Project advisor	December 2008
Naomi Loges	MPH Epidemiology	Project advisor	December 2008
Katherine Harrison	MPH Epidemiology	Project advisor	September 2008
Albert Rovira	Post-doc	Mentor	September 2008
Jeremy Smith	MPH Epidemiology	Project advisor	May 2008
Joanna Lukas	PhD Animal Science	Committee member	May 2008
Kristen Harrison	MPH Epidemiology	Project advisor	June 2008
Zhenyu Pan	MSc Biostatistics	Committee member	June 2008
Albert Rovira	PhD Veterinary Medicine	PhD advisor	October 2007
Natalia Cernicchiaro	MSc Veterinary Medicine	Committee member	December 2006

¹ Macalester College, Minnesota ² Austral Universidad, Chile ³ Universidad Catolica de Chile ⁴ Universidad CES, Colombia