

MARÍA CECILIA MILANO DE TOMASEL

SOIL BIODIVERSITY AND ECOSYSTEM FUNCTIONING
LAB. 350/363 BIOLOGY
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QUALIFICATIONS SUMMARY

Research Scientist with experience in Nematology and invertebrate lab and field research, data collection and analysis.
Experience in design of experiments for both field and greenhouse studies.
Laboratory experience in developing and maintaining pure nematode cultures.
Proficiency in microscopic identification and enumeration of soil invertebrates.
Specialist in soil nematology field and laboratory techniques.
Experience in pathogen inoculation.
Experience handling laboratory chemicals and pesticides.
Familiar with ELISA and PCR techniques.
Experience in training undergraduates, graduates and post-doctoral fellows. Experience in training people for identification of nematodes.

EDUCATION

MASTER OF SCIENCE, 1997

Colorado State University
Department of Bioagricultural Sciences and Pest Management (former Plant pathology)
Thesis Title: “Distribution and biology of *Ditylenchus dipsaci* and *Aphelenchoides ritzemabosi* in alfalfa grown in Colorado”

BIOLOGIST, 1992

Universidad Nacional de Mar del Plata (Argentina)
Thesis title: “Study of nematode population dynamics in potato cultivars”

AWARDS

OUTSTANDING GRADUATE STUDENT AWARD
Department of Bioagricultural Sciences and Pest Management, Colorado State University,
(1995).

WORK EXPERIENCE

Research Associate IV Laboratory Manager, Dr. Diana H. Wall Laboratory, Department of Biology, Colorado State University, (4/08 – present).

Head Nematologist / pathologist, Potato disease diagnosis. Diagnósticos Vegetales Inc. (Mar del Plata, Argentina). (1998-2002).

Researcher, Potato Late Blight Project. INTA (Nacional Institute for Agricultural Technology), Argentina (2001).

Research assistant, Karnal bunt Project. Plant Pathology Clinic, Department of Bioagricultural Sciences and Pest Management, Colorado State University (1997).

Research Assistant, Alfalfa nematodes Project. Department of Bioagricultural Sciences and Pest Management, Colorado State University (1993-97).

Research Assistant, Study of nematode population dynamics in potato cultivars. Nematology Lab, INTA (Argentina) (1987-91).

Research Assistant, Nutria Breeding and Genetics Group, INTA (Argentina) (1989-91).

Teaching Assistant, Department of Biology, Universidad Nacional de Mar del Plata (Argentina) (1988-1991)

Outreach professional, Putnam School of Science, (Poudre School District, Fort Collins) (2006-08).

PAPERS IN PEER-REVIEWED JOURNALS

Franco, A. L.C, Guan, P., Cui, S. Milano de Tomasel C., Gherardi, L. A., Sala, O. E., & Wall, D. H. (2022). Precipitation effects on nematode diversity and carbon footprint across grasslands. *Global Change Biology*, 28(6), 2124-2132. <https://doi.org/10.1111/gcb.16055>

Ankrom, KE; Franco, ALC; Fonte, SJ; Gherardi, LA; de Tomasel, CM; Wepking, C; Guan, P; Cui, S; Sala, OE; Wall, DH (2022) Ecological maturity and stability of nematode communities in response to precipitation manipulations in grasslands. *Applied Soil Ecology*. 170, 104263.

Franco, ALC; Gherardi, LA; de Tomasel, CM; Andriuzzi, WS; Ankrom, KE; Bach, EM; Guan, P; Sala, OE; Wall, DH (2020) Root herbivory controls the effects of precipitation on the partitioning between above- belowground grass biomass. *Functional Ecology*. 34, 2403-2410.

Ankrom, KE; Franco, ALC; de Tomasel CM; Gherardi, LA; Sala, OE; Wall, DH (2020) Ecto- and endoparasitic nematodes differ in response to precipitation across a temporal but not a spatial gradient. *Oecologia*. 193, 761–771.

Andriuzzi, WS; Franco, ALC; Ankrom, KE; Cui, S; de Tomasel CM; Guan, P; Gherardi, LA; Sala, OE; Wall, DH (2020) Body size structure of soil fauna along geographic and temporal gradients of precipitation in grasslands. *Soil Biology & Biochemistry*. 140, 107638.

Prins CN, Hantzis LJ, Valdez-Barillas JR, Cappa JJ, Fakra SC, Milano de Tomasel C, Wall DH, Pilon-Smits EAH (2019) Getting to the Root of Selenium Hyperaccumulation – Localization and Speciation of Root Selenium and its Effects on Nematodes. *Soil Systems* 3, 47; doi:10.3390/soilsystems3030047.

Franco, A.L.C., Gherardi, L.A., de Tomasel, C.M., Andriuzzi, W.S., Ankrom, K.E., Shaw, E.A., Bach, E.M., Sala, O.E., and Wall, D.H. (2019) Drought suppresses soil predators and promotes root herbivores in mesic, but not in xeric grasslands. *Proceedings of the National Academy of Sciences*, 10.1073/pnas.1900572116.

Franco, ALC; Knox, MA; Andriuzzi, WS; de Tomasel, CM; Sala, OE; Wall, DH (2017) Nematode exclusion and recovery in experimental soil microcosms. *Soil Biology and Biochemistry*, 108, 78-83.

Mueller, Kevin E., Dana M. Blumenthal, Yolima Carrillo, Simone Cesarz, Marcel Ciobanu, Jes Hines, Susann Pabst et al. "Elevated CO₂ and warming shift the functional composition of soil nematode communities in a semiarid grassland." *Soil Biology and Biochemistry* 103 (2016): 46-51.

Shaw, EA, K Deneff, C Milano de Tomasel, MF Cotrufo, and DH Wall. Burning management in the tallgrass prairie affects root decomposition, soil food web structure and carbon flow. *SOIL*,210(2016).

Andrés, P, JC Moore, RT Simpson, G Selby, F Cotrufo, K Deneff, ML Haddix, EA Shaw, C Milano de Tomasel, R Molowny-Horas, DH Wall. Accepted. Soil food web stability in response to grazing in a semi-arid prairie: the importance of soil heterogeneity. *Soil Biology and Biochemistry*. Doi: 10.1016/j.soilbio.2016.02.014

Garcia-Palacios, P; Vandegehuchte, ML; Shaw, EA; Dam, M; Post, KH; Ramirez, KS ; Sylvain, ZA; Milano de Tomasel, C and Wall, DH;” Are there links between responses of soil microbes and ecosystem functioning to elevated CO₂, N decomposition and warming? A global perspective”. *Global Change Biology* 21(4) (2015).

Vandegehuchte, ML; Sylvain, ZA; Reichmann, LG; Milano de Tomasel, C; Nielsen, UN; Wall, DH; Sala, OE; “Responses of a desert nematode community to changes in water availability”. *Ecosphere* 6 (3): art 44, DOI:10.189/ES14-00319.1(2015).

Cotrufo, MF; Soong, J; Vandegehuchte, ML; Nguyen, T; Deneff, K; Shaw, EA; Sylvain, ZA, de Tomasel, CM; Nielsen, UN; Wall, DH; “Naphthalene addition to soil surfaces: A feasible method to reduce soil micro-arthropods with negligible direct effects on soil C dynamics”. *Applied Soil Ecology* 74, 21 (2014).

Milano de Tomasel, C; Adams, BJ; Tomasel, FG; Wall, DH; “The life cycle of the Antarctic Nematode *Plectus murrayi* under laboratory conditions”. *Journal of Nematology* 45, 39 (2013)

Adhikari, BN; Tomasel, CM; Li, G; Adams, BJ; Wall, DH; “Culturing the Antarctic Nematode *Plectus murrayi*”. Cold Spring Harbor Protocols 2010, doi: 10.1101/pdb.prot5522 (2010).

Adhikari, BN; Tomasel, CM; Li, G; Adams, BJ; Wall, DH; “The Antarctic Nematode *Plectus murrayi*: An emerging model to study multiple stresses”. Cold Spring Harbor Protocols 2010, doi: 10.1101/pdb.emo142 (2010).

Milano De Tomasel, CM; McIntyre, GA; “Distribution and biology of *Ditylenchus dipsaci* and *Aphelenchoides ritzemabosi* in alfalfa grown in Colorado”. Nematropica 31, 11 (2001).

Mezzadra, C; Milano C., Nicolini, JE; Faverin, C; “Genetic and phenotypic parameters for fur and growth traits in Nutria (*Myocastor coypus*)”. Scientifur 16, 33 (1992).

CONFERENCE PRESENTATIONS

Franco, ALC; de Tomasel CM; Andriuzzi, WS; Ankrom, KE; Bach, EM; Gherardi, LA; Sala, OE; Wall, DH (2019) Root herbivory controls the effects of precipitation on above-belowground grass biomass partitioning: a greenhouse study. *Soil Ecology Society Biennial Meeting*, Toledo, OH, USA.

Franco, ALC; Gherardi, LA; de Tomasel CM; Andriuzzi, WS; Ankrom, KE; Bach, EM; Sala, OE; Wall, DH (2018) Drought suppresses soil predators and promotes root herbivores in mesic, but not in xeric grasslands. *Ecological Society of America Annual Meeting*, New Orleans, USA.

Franco ALC; Gherardi, LA; de Tomasel CM; Andriuzzi, WS; Shaw, EA; Ankrom, KE; Sala, OE; Wall, DH (2017) Cross-site responses of soil nematodes to abnormal growing-season precipitation. *2017 Ecological Society of America Annual Meeting*, Portland, USA.

Franco ALC; Knox, MA; Andriuzzi, WS; Tomasel, CM; Wall, DH (2016) Nematode exclusion and recolonization for experimental soil microcosms. 2016 Ecological Society of America Annual Meeting. Fort Lauderdale, USA.

Johansson, C; Pullan, R; Marx, J; Orneas, M; Wall, DH; de Tomasel, CM; Adams, BJ; “Response of the terrestrial tardigrade *Acutuncus antarcticus* to predicted, climate driven habitat change”. SCAR 2014, New Zealand.

Knox, MA; Cox, DJ; Adams, BJ; de Tomasel, CM; Virginia, RA; Wall, DH; “Nematode species distributions, demographics and survival in response to freeze-thaw cycles in soils of the McMurdo Dry Valleys, Antarctica”. SCAR 2014, New Zealand.

Cox, DJ; Shaw, EA; de Tomasel, CM; Wall, DH; “Establishing standardized methods for analysis of carbon in soil mites”. CURC 2012, Colorado State University

Cox, DJ; de Tomasel, CM; Shaw, EA; Wall, DH; “Laboratory culture of nematode *Panagrolaimus davidi* from Cape Royds, Antarctica”. CURC 2013, Colorado State University.

de Tomasel, CM; Shaw, EA; Cox, DJ; Wall, DH; “Establishing standardized methods for analysis of carbon in soil nematodes and mites”. Society of Nematology Meeting, Portland, Oregon 2012

de Tomasel, CM; Adams, BJ; Adhikari, BN; Wall, DH; “Life cycle of *Plectus murrayi* under laboratory conditions”. Society of Nematologists 50st Annual Meeting, Corvallis, Oregon, 2011.

Ivanovich, K; Beam, R; de Tomasel, CM; Wall, DH; “Isolation and culture of Antarctic nematode *Eudorylaimus antarcticus* under laboratory conditions”. CURC 2011, Colorado State University.

De Tomasel, CM; Li, G; Adams, BJ; Adhikari, BN; Wall, DH; “Isolation of the Antarctic nematode *Plectus Murrayi* under laboratory conditions”. 12th Biennial Soil Ecology Society Conference, Burlington, Vermont 2009.

Milano de Tomasel, MC; McIntyre, G; “Distribution and biology of *Ditylenchus dipsaci* and *Aphelenchoides ritzemabosi* in Colorado”. American Phytopathological Society Meeting (Pacific Division), Fort Collins, CO 1997.

CONTINUING EDUCATION

Supervisor development program. Colorado State University, Fort Collins Colorado (2018-2019)

“International Nematode identification course”. Dr. Tom Bongers, Wageningen University, Wageningen, The Netherlands (2011).

“Conservation and sustainable use of soil biodiversity: An international conference on predicting soil biodiversity patterns under climate change”. NREL, Colorado State University (2008).

“Nematode identification short course”. Department of Plant Pathology and Physiology. Clemson University, SC (1994)

“Introduction to electron microscopy”. Universidad Nacional de Mar del Plata, Argentina (1998).

“Nematodes and their effect in farm production”. Universidad Nacional de Mar del Plata, Argentina (1988).

MEETINGS

LTER all Scientist Meeting, Estes Park, Colorado 2015

The Society of Nematology Meeting, Michigan State University, East Lansing, July 19-24, 2015

Soil Ecology Society, Colorado Springs, Colorado 2015

The Society of Nematology, Knoxville, Tennessee July 14-18, 2013

LTER all Scientist meeting , Estes Park Colorado ,2012.

ESA (Ecological Society of America meeting) Portland, Oregon August 5-10.2012

The Society of Nematology Meeting, Savannah Georgia August 12-15,2012.

The Society of Nematology 50th Anniversary Meeting, Corvallis, OR (2011).

MCMurdo LTER Science Meeting, Colorado State University, Fort Collins, CO (2010)

LTER All Scientists Meeting, Estes Park, CO (2009).

Soil Ecology Society and Society of Nematology Meeting, Burlington, VE (2009).

MENTORING

Honor Thesis CSU

2018- 2019 Nisha Gill (with Dr Andre Franco , Dr Diana Wall)

2017-2018 Abigail Jackson (with Dr. Andre Franco, Dr Diana Wall)

2012-2014 Deanna Cox (with Dr Ashley Shaw)

2010-2011 Kyrie Ivanovich (with Dr Uffe Nielsen, Dr Ashley Shaw, Dr Diana Wall)

OUTREACH AND PROFESIONAL SERVICES

Organizer and moderator of the symposium “ Nematodes as indicators for Climate Change and ecosystem sustainability” Held at the 2015 Society of Nematology Meeting. East Lansing, Michigan, USA

Chairman of the Ecology Committee for the Society of Nematology 2013-2015.

Presentation at the Colorado Spring Science Festival, October 2014.

Presentation at Polaris expeditionary Learning School, Fort Collins, Colorado 2012.

Presentation at Johnson Elementary School, Fort Collins Colorado 2009.