

CURRICULUM VITAE

Name: Jessica Wildgrube Bertol, BS, MS, PhD

Present Title: Research Assistant II

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Citizenship: Brazilian

Graduate Education:

- 2004-2008 Bachelor of Sciences in Biology (BS) degree
State University of Maringa – UEM, Brazil
- 2009-2011 Master of Science (MS) in Biotechnology
Federal University of Santa Catarina – UFSC, Brazil
Advisor: Claudia Maria Oliveira Simoes
Grantee of: National Council for Scientific and Technological
Development (Conselho Nacional de Desenvolvimento
Científico e Tecnológico) – CNPq, Brazil
Dissertation: Antiherpes activity evaluation of cardenolides and
derivatives.
- 2012-2016 PhD in Genetics and Molecular Biology
State University of Campinas - UNICAMP, Brazil
Advisor: Maria Silvia Viccari Gatti
Grantee of: Sao Paulo Research Foundaion (Fundação de
Amparo a Pesquisa do Estado de Sao Paulo) – FAPESP, Brazil
Thesis: The action of the nonstructural protein 4 (NSP4) from
rotavirus on in vitro cellular permeability and on intestinal fluids
in mice (*in vivo* model)

Awards and Fellowships:

- 2011-2016 Doctoral Fellowship, São Paulo State Research Foundation
(FAPESP).

- 2009 - 2011 Master Fellowship, National Council for Scientific and Technological Development (CNPq).
- 2007 Undergraduate selected for oral communication, XVI Annual Meeting of Scientific Initiation, Brazil.
- 2005 Undergraduate selected for oral communication, XIV Annual Meeting of Scientific Initiation, Brazil.
- 2005-2007 Scientific Initiation Fellowship, Araucaria Foundation (FAPESP).

Research Projects:

Postgraduate Research Experience

- 2017-present Role of TWIST1 phospho-sites in epithelial-to-mesenchymal transition (EMT) during formation of cranial neural crest cells.
Principal Investigator: Dr. Walid Fakhouri
Grantee of: Bone Disease Program of Texas
- 2017-present Developing a predictive model to identify pathological Non-coding DNA variations in cis-overlapping motifs (CisOMs) of P53 and cMYC in Cancer.
Principal Investigator: Dr. Walid Fakhouri
Grantee of: NIH/NIGMS

Graduate Research Experience

- 2012-2016 The action of the nonstructural protein 4 (NSP4) from rotavirus on *in vitro* cellular permeability and on intestinal fluids in mice (*in vivo* model).
Grantee of: Sao Paulo Research Foundation (Fundação de Amparo a Pesquisa do Estado de Sao Paulo) – FAPESP, Brazil.
- 2012-2016 Complete genomic analysis of strains of HuRV-A from São Paulo, Brazil, non-typing G2 and G genotypes: using the new classification system and investigation of genotypic variability after vaccine introduction into the Brazilian public health system.
Grantee of: Sao Paulo Research Foundation (Fundação de Amparo a Pesquisa do Estado de Sao Paulo) – FAPESP, Brazil.

2010-2012 *In vitro* study of anti-herpetic activity and oral and cutaneous absorption of cardenolide derivatives of plant, microbial and synthetic origin.
Grantee of: National Council for Scientific and Technological Development (Conselho Nacional de Desenvolvimento Científico e Tecnológico) – CNPq, Brazil.

Undergraduate Research Experience

2006-2007 Antiviral activity investigation of fractions and pure substance, obtained from the leaves of *Piper regnellii* var *pallescens*.

2006-2007 Study of the antiviral activity of plant extracts used in folk medicine.
Grantee of: Scientific Initiation Fellowship, Araucaria Foundation (FAPESP).

Publications:

Peer Reviewed / Refereed Original Articles in Journals:

- 1) Vitor Onuchic, Eugene Lurie, Ivenise Carrero, Piotr Pawliczek, Ronak Y. Patel, Joel Rozowsky, Timur Galeev, Zhuoyi Huang, Robert C. Altshuler, Zhizhuo Zhang, R. Alan Harris, Cristian Coarfa, Lillian Ashmore, Andrew R. Jackson, **Jessica W. Bertol**, Walid D. Fakhouri, Fuli Yu, Manolis Kellis, Mark Gerstein, Aleksandar Milosavljevic, on behalf of the NIH Roadmap Epigenomics project. Allele-specific epigenome maps reveal sequencedependent stochastic switching at regulatory loci. *Science*, eaar3146, 2018.
- 2) Jiang, J.; **Bertol, J.W.** and Fakhouri, W.D. Mandibular Explant Assay for Investigating Extrinsic Stimuli on Bone and Cartilage Development. *Bio-protocol*, 7(23): e2641, 2017.
- 3) Tibo, L.H.S.; **Bertol, J.W.**; Bernedo-Navarro, R.A.; Yano, T. Cytotoxic factor (SPF) secreted by *Escherichia coli* associated with sepsis (SEPEC) facilitates transcytosis through human umbilical vein endothelial cell (HUVEC) monolayers. *The Brazilian Journal of Infectious Diseases*, 20: 298-302, 2016.
- 4) **Bertol, J.W.**; Gatti, M.S. Rapid detection of infectious rotavirus group A using a molecular beacon assay. *Journal of Virological Methods*, 234: 156-159, 2016.
- 5) Zobiolo, N.N.; Caon, T.; **Bertol, J.W.**; Pereira, C.A.S.; Okubo, B.M.; Moreno, S.E.; Cardozo, F.T. *In vitro* and *in vivo* genotoxic evaluation of *Bothrops moojeni* snake venom. *Pharmaceutical Biology*, 53: 930-934, 2015.

- 6) **Bertol, J.W.**; Fregolente, M.C.; Caruzo, T.A.; Silva, M.J.; Munford, V.; Safadi, M.A.; Racz, M.L.; Gatti, M.S. Molecular characterisation of the NSP4 gene of group A human rotavirus G2P[4] strains circulating in São Paulo, Brazil, from 1994 and 2006 to 2010. *Memorias do Instituto Oswaldo Cruz*, 110: 786-792, 2015.
- 7) **Bertol, J.W.**; Santos, P.R.; Rodrigues, J.; Cortez, D.A.G.; Dias Filho, B.P.; Nakamura, C.V.; Ueda-Nakamura, T. Antiviral activity of fractions from leaves of *Piper regnellii* var. *pallescens*. *Revista Brasileira de Farmacognosia*, 22: 1276-1281, 2012.
- 8) **Bertol, J.W.**; Rigotto, C.; de Padua, R.M.; Kreis, W.; Barardi, C.R.; Braga, F.C.; Simoes, C.M. Antiherpes activity of glucoevatromonoside, a cardenolide isolated from a Brazilian cultivar of *Digitalis lanata*. *Antiviral Research*, 92: 73-80, 2011.

Abstracts:

- 1) **Bertol, J.W.**; Xie, V.K.; Hubka, K.M.; Kin, K.; Farach-Carson, C.; Fakhouri, W.D.: Role of TWIST1 phospho-sites in epithelial-to-mesenchymal transition (EMT) during formation of cranial neural crest cells. In: 15th Annual Scientific Retreat of the Bone Disease Program of Texas, 2018, Houston, TX, USA.
- 2) Bertol, J.W.; Kin, K.; Thompson, J.; Mendoza, F.; Tan, E.; Gaggar, A.S.; Jun, G.; Biguetti, C.; Fakhouri, W.D.: A cleft lip and palate gene, *IRF6*, is involved in craniofacial bone mineralization. In: 15th Annual Scientific Retreat of the Bone Disease Program of Texas, 2018, Houston, TX, USA.
- 3) **Bertol, J.W.**; Gatti, M.S.V.: Rapid detection of human rotaviruses A by using a molecular beacons assay. In: 28th Brazilian Congress of Microbiology, 2015, Florianopolis, SC, Brazil.
- 4) **Bertol, J.W.**; Fregolente, M.C.D.; Caruzo, T.A.R.; Gatti, M.S.V.: Comparison of the NSP4 deduced amino acid sequences from group A human rotavirus G2P[4]E2 strains circulating in São Paulo, Brazil. In: XXV Brazilian Congress of Virology and IX Mercosur Virology Meeting, 2014, Ribeirão Preto, SP, Brazil.
- 5) Kratz, J.M.; **Bertol, J.W.**; Pádua, R.M.; Schuster, C.; Kreis, W.; Braga, F.C.; Simões, C.M.O.: Identification and prediction of antiviral cardenolides: structure-activity relationships and in silico modeling. In: II Congress of The Brazilian Association of Pharmaceutical Sciences, 2014, Búzios, RJ, Brazil.
- 6) Pádua, R.M.; **Bertol, J.W.**; Kratz, J.M.; Rigotto, C.; Kreis, W.; Simoes, C.M.O.; Braga, F.C.: Influence of the lipophilicity and structural features on the antiherpetic activity of *Digitalis* cardenolides and derivatives. In: VIII Brazilian Symposium on

Pharmacognosy and I International Symposium on Pharmacognosy, 2012, Ilhéus, BA, Brazil.

- 7) **Bertol, J.W.**; Fregolente, M.C.D.; Caruzo, T.A.R.; Sáfadi, M.A.P.; Munford, V.; Rácz, M.L.; Gatti, M.S.V.: Phylogenetic analysis in the new classification of G2P[4] rotavirus NSPs from strains identified in São Paulo, Brazil. In: 11th International Symposium on Double-Stranded RNA Viruses, 2012, San Juan, Puerto Rico.
- 8) Rigotto, Caroline; Carvalho, A.; **Bertol, J.W.**; Kreis, W.; Barardi, C.R.M.; Braga, F.C.; Simoes, C.M.O.: Antiherpes activity of the cardenolides glucoevatromonoside and convallatoxin. In: XV International Congress of Virology, 2011, Sapporo, Japan.
- 9) **Bertol, J.W.**; Pádua, R.M.; Rigotto, C.; Kreis, W.; Braga, F.C.; Barardi, C.R.M.; Simoes, C.M.O.: Antiherpes activity and mode of action of a carnolide derivative. In: XXI National Meeting of Virology and V Mercosur Virology Meeting, 2010, Gramado, RS, Brazil.
- 10) **Bertol, J.W.**; Pádua, R.M.; Rigotto, C.; Kreis, W.; Braga, F.C.; Barardi, C.R.M.; Simoes, C.M.O.: Antiherpes activity and mode of action of a cardenolide derivative. In: Antivirals Congress, 2010, Amsterdam, Netherlands.
- 11) **Bertol, J.W.**; Carvalho, A.; Pádua, R.M.; Kreis, W.; Braga, F.C.; Barardi, C.R.M.; Simoes, C.M.O.: Antiherpes screening of carnolide derivatives. In: XXI National Meeting of Virology and V Mercosur Meeting of Mercosur, 2010, Gramado, RS, Brazil.
- 12) Lucarini, R.; **Bertol, J.W.**; Cunha, W.R.; Casemiro, L.A.; Simoes, C.M.O.; Martins, C.H.G.: Evaluation of the potential anti-herpes activity of the crude extracts of *Pterodon emarginatus* (sucupira). In: 32th Annual Meeting of the Brazilian Society of Chemistry, 2009, Fortaleza, CE, Brazil.
- 13) Goncalves, C.R.; Oliveira, J.C.; Lucarini, R.; **Bertol, J.W.**; Simoes, C.M.O.; Martins, C.H.G.; Heleno, V.C.G.: Anti-herpes potential evaluation of *Tithonia diversifolia* crude extracts. In: 7 International Congress of Pharmaceutical Sciences, 2009, Riberão Preto, SP, Brazil.
- 14) **Bertol, J.W.**; Pádua, R.M.; Kreis, W.; Brga, F.C.; Barardi, C.R.M.; Simoes, C.M.O.: Antiherpes screening of some cardenolide derivates. In: XX National Virology Meeting, 2009, Brasília, Brazil.
- 15) Caon, T.; **Bertol, J.W.**; Costa, A.C.O.; Micke, G.A.: Evaluation of genotoxicity and phytochemical profile of passionflower and orchid hydroglicolic extracts. In: 19th UFSC Scientific Initiation Seminar, 2009, Florianópolis, SC, Brazil.

- 16) Moreira, A.L.O.R.; Brao, A.F.S.; Morales, B.F.; DUSMAN, E.; **Bertol, J.W.**; Brito, J.E.C.; Oliveira, J.G.; Gois, K.S.; Rocha, K.J.P.; Carvalho, P.G.; Buosi, P.R.B.; Ota, R.P.; Pallone, S.F.; Camargo, T.; Cionek, V.M.; Gomes, V.N.: Revitalization of the Laboratory - a proposal for the teaching of Science and Biology. In: VIII Maringaense Meeting of Biology and XXI Week of Biology, 2006, Maringá, PR, Brazil.

Oral Presentations:

- 1) **Bertol, J.W.**; Cortez, D.A.G.; Dias Filho, B.P.; Nakamura, C.V.; Ueda-Nakamura, T.: Investigation of the antiviral activity of fractions and pure substance, obtained from the leaves of *Piper regnellii* var *pallescens*. In: XVI Annual Meeting of Scientific Initiation, 2007, Maringa, PR, Brazil.
- 2) **Bertol, J.W.**; Santos, P.R.; Dias Filho, B.P.; Nakamura, C.V.; Ueda-Nakamura, T.; Volpe, A.V.T.: Evaluation of the antiviral activity of the crude hydroethanolic extract and fractions obtained from the aerial parts of *Achyrocline alata*. In: XIV Annual Meeting of Scientific Initiation, 2005, Guarapuava, PR, Brazil.

Participation in National and International Conferences:

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| 2018 | 15 th Annual Scientific Retreat of the Bone Disease Program of Texas, Houston, TX, USA. |
| 2015 | Brazilian Congress of Microbiology, Florianopolis, SC, Brazil. |
| 2014 | XXV Brazilian Congress of Virology and IX Mercosur Virology Meeting, Ribeirao Preto, SP, Brazil. |
| 2012 | 11th International Symposium on Double-Stranded RNA Viruses, San Juan, Puerto Rico. |
| 2010 | XXI National Virology Meeting and V Mercosur Virology Meeting, Gramado, RS, Brazil. |
| 2009 | XX National Virology Meeting, Brasília, DF, Brazil. |
| 2007 | XVI Annual Meeting of Scientific Initiation, Maringa, PR, Brazil. |
| 2005 | XIV Annual Meeting of Scientific Initiation, Guarapuava, PR, Brazil. |

Service and Academic Activity:

- 2015 Poster evaluator in the XII Open Congress for Biology Students at State University of Campinas (UNICAMP, Brazil).
- 2015 Abstract reviewer to select studies for the XXIII UNICAMP Scientific Initiation Congress, Campinas, Brazil.

Course Monitoring:

- 2014 Monitor in the Virology research field during the “UNICAMP de Portas Abertas” event, at the State University of Campinas (UNICAMP, Brazil), to approximate undergraduated students to different research fields.
- 2013 Monitor in the Virology research field during the “UNICAMP de Portas Abertas” event, at the State University of Campinas (UNICAMP, Brazil), to approximate undergraduated students to different research fields.
- 2012 Monitor in the Virology research field during the “UNICAMP de Portas Abertas” event, at the State University of Campinas (UNICAMP, Brazil), to approximate undergraduated students to different research fields.
- 2012 Monitor in the course entitled “Animals classification” at State University of Campinas – UNICAMP, Brazil.

Didactic Experience:

- 2010 Speaker in the Winter Course for Biotechnology at the Federal University of Santa Catarina – UFSC, Brazil.
- 2010 Speaker in the course entitled “Bioactivity evaluation of natural products using *in vitro* techniques” at the Federal University of Santa Catarina – UFSC, Brazil.

Journal Reviewer:

- 2016-Present Journal of Infection and Public Health
- 2017-Present Journal of Virology & Antiviral Research

Student Mentoring:

- 2018-Present Gianncarlo Cruz
Ph.D. Bench Mentor
Project: Role of IRF6 and TWIST1 in neural crest cells and
craniofacial development.
UTHealth at Houston
- 2018-Present Kent Healy
Ph.D. Bench Mentor
Project: The effect of biphosphonate on bone development in *Irf6*
het and null mice.
UTHealth at Houston
- 2018-Present William Paz
Ph.D. Bench Mentor
Project: Role of IRF6 and TWIST1 in neural crest cells and
craniofacial development.
UTHealth at Houston
- 2017-Present Victoria Xie
Ph.D. Bench Mentor
Project: Deciphering *Irf6* signaling pathway in cranial neural
crest and craniofacial organ development.
UTHealth at Houston
- 2017 Jessica Hartz
Ph.D. Bench Mentor
Project: Genetic interaction between IRF6 and TWIST1 during
craniofacial development.
UTHealth at Houston