



AGUSTINA DE FRANCESCO, CV

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### **Research interests**

- ✓ Plant sciences, molecular biology, biotechnology, plant pathology

### **Education**

- ✓ **PhD, Biological Sciences**, National University of La Plata (Spanish: Universidad Nacional de La Plata, UNLP), La Plata, Buenos Aires, Argentina. **2010-2015**
- ✓ **Dissertation grade (equivalent to MS), Biotechnology and Molecular Biology**, UNLP. **February 2008-2010**
- ✓ **BSc, Biotechnology and Molecular Biology**, UNLP. **2005-2009**
- ✓ **Teaching degree**, Conservatory of Music Gilardo Gilardi, La Plata, Buenos Aires, Argentina. **2003-2009**

### **Employment history**

- ✓ **Technical Nomenclature Associate**, The Brand Institute. **2020-present**  
Developing generic names for drugs, diagnostic, and treatments. Miami, FL, USA.
- ✓ **Postdoctoral Researcher**, University of California Riverside (UCR). **2016-2020**  
Studied the bacteria associated with citrus Huanglongbing (HLB) disease and its detection. Assessment of antigenic proteins and development of antibody-based detection methods, while studying effectoromics and expression profiles from the pathogen, and plant-pathogen interactions; in Wenbo Ma lab, Department of Plant Pathology and Microbiology, UCR. Riverside, CA, USA.
- ✓ **Postdoctoral Researcher**, UNLP. **2015-2016**  
Focused on Control of bacterial diseases of citrus by acquired resistance and pathogen control. Developed genetics constructs and transformed citrus to evaluate transgenic resistance. Explored biocontrol by using bacteriophages, and performed diagnosis for citrus psorosis, in María Laura Garcia lab, Instituto de Biotecnología y Biología Molecular (IBBM) La Plata, UNLP, Argentina.
- ✓ **Teaching assistant**, UNLP. **2010-2016**  
Taught Biological chemistry, Biotechnology for Superior Organisms, Microbiology and Plant Biology undergraduate classes in the College of Exact Sciences. Lectured seminar, led discussion sessions, and supervised the laboratory sessions. La Plata, UNLP, Argentina.
- ✓ **Lab professor**, UNLP. **2015**  
Taught Biochemistry undergraduate class in the College of Exact Sciences. Planned and lectured laboratory sessions I coordinated duties for teaching assistants.

✓ **Graduate researcher, UNLP. 2010-2015**

Studied transgenic citrus lines resistant to Citrus psorosis virus and the transmission of the resistance through the graft, to generate hybrid trees by grafting, with non-GMO scion as a sustainable alternative for citrus psorosis control. Developed and improved diagnostic methods (RT-qPCR and ELISA), in María Laura García lab.

✓ **Undergraduate researcher, UNLP. 2008-2010**

Performed research on micropropagation of *Populus* spp., in Dr Sandra Sharry and Walter Abedini lab at the Center for Plant Propagation (CEPROVE), La Plata, Argentina in 2008. Research on control of citrus psorosis disease by using transgenic citrus, in Maria Laura Garcia lab, in 2009.

**Other professional experiences**

✓ **Lab Mentor, UCR. 2016-2020**

Tutored and supervised the following students at Wenbo Ma lab: Emily Ong (3rd year undergraduate), Jessica Thrin (Rotation in the Microbiology graduate program), Beatrice Diep (first-year student orientation), Francisco Hernandez (undergraduate work internship), Thomas Forest (Research in Science and Engineering, Summer Program RISE).

✓ **Outreach volunteer, UCR. 2016-2020**

Represented Wenbo Ma lab in outreach events with the local communities, the California Historic Citrus Park, and the citrus industry. Participated in student recruitment for the same lab.

✓ **BSL-3 facility responsible, California Citrus Research Foundation facility. 2018-2020**

Assigned as responsible for Wenbo Ma lab, was trained to work in a Biosecurity level-3 laboratory, applied for authorizations, helped setting up the facility and established Standard Operation Procedures. Riverside, CA, USA.

✓ **Citrus Disease Diagnosis Service Provider, UNLP/UCR. 2010-2020**

Developed, performed, and provided diagnosis for citrus diseases by ELISA and RT-qPCR: psorosis in UNLP, Argentina, and HLB at UCR. 2010-2016 and 2016-2020 respectively. Performed serological HLB diagnosis in the company Southern Gardens (US Sugar), Clewiston, FL, in 2018.

✓ **Outreach Volunteer, Rothamsted Research. 2020**

Participated at the Plant Defenders Challenge (Girlguiding challenge pack) organized by the British Society for Plant Pathology and Rothamsted Research, United Kingdom, teaching and counselling about plant health.

✓ **Extensionist, UNLP. 2008-2009**

Represented Argentina in the Ibero-American Network of Education in Food Biotechnology. "Bioeducar" - CYTED- REDBIO Foundation, conducting educational programs to teach local communities about food biotechnology.

**Conference and symposia organization**

- ✓ Volunteer in the organization of the Joint Conference of IOCV/IRCHLB (International Organization of Citrus virologists/ International Research Conference in Huanglongbing), Riverside, CA, USA, 2019.
- ✓ Judge of the Graduate Program in Genetics, Genomics & Bioinformatics (GGB) at UCR, 2019.
- ✓ Symposium director as part as the Riverside postdoctoral association (RPA) board, UCR, 2018-2019.
- ✓ Organizing committee member and awards jury in the 4th Annual Center for Plant Cell Biology (CEPCEB) PostDoc Symposium at UCR, 2017.

## **Publications**

### **Peer-reviewed Journal articles**

- 1- **De Francesco, A.**, Shaw, D., Qiu, M., Hulin, M., Levy, A., Jiang, T., Ma, W. (2021) a. Global transcriptome profiling of *Candidatus Liberibacter asiaticus* under in Citrus and in Psyllid Conditions. *Manuscript in preparation*
- 2- **De Francesco, A.**, Levy, A., Vidalakis, G., Ma, W. (2021) b. Antibody-based detection of *Candidatus Liberibacter asiaticus* for citrus Huanglongbing diagnosis. *Manuscript in preparation*
- 3- Salvatierra, J.P., **De Francesco, A.**, Ma, W., Vicent, C. (2021). Effects of colored Kaolin particle films on citrus growth, shade acclimation, and protection against Asian Citrus Psyllid and Huanglongbing disease. *Manuscript in preparation*
- 4- Hawara, E., **De Francesco, A.**, Thrin, J., McClelland, A., Ma, W. (2021). SDE1, a secreted effector of *Candidatus Liberibacter* needs the chemical environment citrus phloem to achieve its biological functions in the infection mechanism. *Manuscript on preparation*
- 5- **De Francesco, A.**, Sendin, L.N., Gomez, R.L., Reyes, C.A. (2021). Transgenic-Based Solutions Attempting Citrus Disease Management in Argentina. *Crop Science. Under review*
- 6- Pagliaccia, D., Bodaghi, S., Chen, X., Stevenson, D., Deyett, E., **De Francesco, A.**, et al. (2020). Two food waste byproducts selectively stimulate beneficial resident citrus host-associated microbes in a zero-runoff indoor plant production system. *Frontiers in Sustainable Food Systems*. 4, 593568. doi: 10.3389/fsufs.2020.593568
- 7- **De Francesco, A.**, Simeone, M., Gómez, C., Costa, N., García, M.L. (2020). Transgenic Sweet Orange expressing hairpin CP-mRNA in the interstock confers tolerance to Citrus psorosis virus in the non-transgenic scion. *Transgenic Research*. 29(2), 215-228. doi: 10.1007/s11248-020-00191-1
- 8- Thapa, S., **De Francesco, A.**, Trinh, J., Gurung, F., Pang, Z., Vidalakis, G., et al. (2020). Genome-wide analyses of *Liberibacter* species provides insights into evolution, phylogenetic relationships and virulence factors. *Molecular Plant Pathology*. 21(5), 716-731. doi: 10.1111/mpp.12925
- 9- Pagliaccia, D., Shi, J., Pang, Z., Hawara, E., Clark, K., Thapa, S. B., **De Francesco, A.**, et al. (2017). A Pathogen Secreted Protein as a Detection Marker for Citrus Huanglongbing. *Frontiers in Microbiology*. 8, 2041. doi: 10.3389/fmicb.2017.02041

- 10- De Francesco, A.,** Costa, N., Garcia, M.L. (2017). Citrus psorosis virus coat protein-derived hairpin construct confers stable transgenic resistance in citrus against psorosis A and B syndromes. *Transgenic Research* 26(2), 225-235. doi: 10.1007/s11248-016-0001-2
- 11- Reyes, C.A., De Francesco, A.\*** (equal contribution), Ocolotobiche, E.E., Costa, N., Garcia, M.L. (2016). Uncontrolled Citrus psorosis virus infection in Citrus sinensis transgenic plants expressing a viral 24K-derived hairpin that does not trigger RNA silencing. *Physiological and Molecular Plant Pathology*. 94, 149–155. doi: 10.1016/j.pmpp.2016.05.001
- 12- De Francesco, A.,** Costa, N., Plata, M.I., Garcia, M.L. (2015). Improved Detection of Citrus psorosis virus and Coat Protein-Derived Transgenes in Citrus Plants: Comparison between RT-qPCR and TAS-ELISA. *Journal of Phytopathology*. 163(11-12), 915-925. doi: 10.1111/jph.12392
- 13- Ben Guerrero, E., De Francesco, A.,** Garcia, M.L., Balatti, P.A., Dal Bó. E. (2013). First Report of Tomato rugose yellow leaf curl virus Infecting Tomato in Argentina. *Plant Disease*, 97 (12): 1662. doi: 10.1094/PDIS-01-13-0003-PDN
- 14- De Francesco, A.,** Reyes, C.A, Robles Luna, G., Ocolotobiche, E.E., Borniego, M.B., Costa, N., García, M.L. (2011). Study of systemic movement of citrus psorosis virus from a CPsV-resistant transgenic rootstock to a non-resistant scion. (In Spanish). *Revista Argentina de Microbiología*, 42 (Supl 1), 32.
- 15- Robles Luna, G.,** Peña, E.J., **De Francesco, A.,** Ocolotobiche, E.E., Borniego, M.B., Reyes, C.A, García, M.L. (2011). 54K and 55K proteins from the Ophioviruses CPsV and MLBVV interact in vivo with the Plasmodesmata Located Protein (PDL1). (In Spanish). *Revista Argentina de Microbiología*, 42 (Supl 1): 31-32.
- 16- Reyes, C.A., De Francesco, A.,** Peña, E.J., Costa, N., Plata, M.I., Sendin, L., Castagnaro, A.P., Garcia, M.L. (2011). Resistance to Citrus psorosis virus in transgenic sweet orange plants is triggered by coat protein-RNA silencing. *Journal of Biotechnology*, 151(1), 151-158. doi: 10.1016/j.jbiotec.2010.11.007

#### Peer-Reviewed Conference Abstracts

- 17- Clark, K.,** Franco J., Pang, Z., **De Francesco, A.,** Hawara, E., Trinh, J., Ancona, V., Wang, W., Coaker, G.L., Ma, W. Effectoromics of Citrus Huanglongbing, in International Society for Molecular Plant-Microbe Interactions XVIII congress, Glasgow, Scotland, 2019.
- 18- De Francesco, A.,** Clark, K., Lee, K., Ge, X., Ma, W. Antibody-based detection of Huanglongbing (HLB)-associated pathogen, in VI International research conference in Huanglongbing, Riverside, USA, 2019.
- 19- De Francesco, A.,** Clark, K., Liu, J., Pagliaccia, D., Tran, T.T., Mulchandani, A., Vidalakis, G., Ma, W. ELISA detection for HLB using a pathogen-secreted protein as the biomarker, in V International Research Conference on Huanglongbing (IRCHLB), Orlando, USA, 2017.
- 20- De Francesco, A.,** Costa, N., Garcia, M.L. ihpCP Sweet Orange transgenic lines are resistant to Psorosis A and Psorosis B, in XX Conference of the IOCV, International Organization of Citrus Virologists, Chongqing, China, 2016.
- 21- De Francesco, A.,** Costa, N., Plata, M.I., García, M.L. Nuevas metodologías de diagnóstico para Citrus psorosis virus, en Congreso Argentino de Citricultura, Bellavista, Argentina, 2015.

- 22- **De Francesco, A.**, Reyes, C.A., Costa, N., Garcia, M.L. Variedades cítricas transgénicas resistentes a psorosis y estrategias de transmisión de la resistencia a copas no transgénicas, en Congreso Argentino de Citricultura, Bellavista, Argentina, 2015.
- 23- **De Francesco, A.**, Reyes, C.A., Costa, N., Plata, M.I., García, M.L. Naranja dulce Pineapple transgénico resistente al virus de la psorosis de los cítricos: estudio de la transmisión de la resistencia hacia el pie y copa, en V Congreso de Agrobiotecnología, Propiedad Intelectual y Políticas Públicas, Paraná, Argentina, 2014.
- 24- **De Francesco, A.**, Reyes, C.A., Costa, N., Garcia, M.L. Grafting and its behavior on CPsV-resistant transgenic oranges, in IXX Conference of the IOCV, International Organization of Citrus Virologists, Mpumalanga, South Africa, 2013.
- 25- Reyes, C.A., **De Francesco, A.**, Costa, N., Garcia, M.L. Gene Silencing of viral 24K- gene induces uncontrolled infection of Citrus psorosis virus (CPsV) but not of the unrelated Citrus tristeza virus (CTV), in IXX Conference of the IOCV, International Organization of Citrus Virologists, Mpumalanga, South Africa, 2013.
- 26- **De Francesco, A.**, Reyes, C.A., Costa, N., Garcia, M.L. Improvement in diagnosis for citrus Psorosis in Argentina by qRT-PCR, in International Citrus Congress, Valencia, Spain, 2012.
- 27- **De Francesco, A.**, Reyes, C.A, Robles Luna, G., Ocolotobiche, E.E., Borniego, M.B., Costa, N., García, M.L. Estudio del movimiento sistémico del virus de la psorosis de los cítricos desde un pie transgénico resistente a una copa no resistente, en Congreso Argentino de Virología, Buenos Aires, Argentina, 2011.
- 28- Robles Luna, G., Peña, E.J., **De Francesco, A.**, Ocolotobiche, E.E., Borniego, M.B., Reyes, C.A., García, M.L. Las proteínas 54K y 55K de los ophiovirus CPsV y MLBVV interactúan in vivo con la proteína Plasmodesmata Located Protein 1 (PDLP1), en X Congreso Argentino de Virología, Buenos Aires, Argentina, 2011.
- 29- Reyes, C.A., **De Francesco, A.**, Costa, N., Plata, M.I., Garcia, M.L. Hairpin RNA expression from Citrus psorosis virus 24K-gene enhances the symptoms of Psorosis in Citrus sinensis, in XVIII Conference of the IOCV, International Organization of Citrus Virologists, Campinas, Brazil, 2010.
- 30- Reyes, C.A., **De Francesco, A.**, Costa, N., Plata, M.I., Garcia, M.L. Transgenic Sweet orange immune to Citrus psorosis virus, in XVIII Conference of the IOCV, International Organization of Citrus Virologists, Campinas, Brazil, 2010.
- 31- Adema, M., Villarreal, B., Abedini, W., Galarco, S., Ciocchini, G., **De Francesco, A.**, Sharry, S. Uso de Biotécnicas para la Propagación y Mejoramiento de Populus Deltoides: Australian 129-60, en XIII Congreso Forestal Mundial, Buenos Aires, Argentina, 2009.
- 32- Abedini, W., Adema, M., Amado Cattaneo, R., **De Francesco, A.**, Ciocchini, G., Sharry, S. In Vitro Regeneration of Populus deltoides cv Australia 129-60, in 23rd Session International Poplar Commission, Beijing, China, 2008.

### **Fellowships and Awards**

- ✓ National Scientific and Technical Research Council (Spanish: Consejo Nacional de Investigaciones Científicas y Técnicas, CONICET, Argentina 2015-2016. Post-Doctoral fellowship
- ✓ CONICET, Argentina 2013-2015. Doctoral fellowship II
- ✓ CONICET, Argentina 2010-2013. Doctoral fellowship I
- ✓ International Organization of Citrus Virologists (IOCV), USA

- 2010-2016. Support to attend the IOCV meetings 2010, 2013 and 2016
- ✓ Argentine-Brazilian Center for Biotechnology (CABBIO), Brazil
- 2012. Support to attend to CABBIO course “Introdução a técnica de Interferência por RNA e microRNAs”
- ✓ Valencian Institute of Agrarian research (Spanish: Instituto Valenciano de Investigaciones Agrarias, IVIA), Spain 2012. Support to attend the ICC (International Citrus Congress 2012)
- ✓ Commission of Scientific Research (Spanish: Comisión de investigaciones científicas de la provincia de Buenos Aires, CIC), Argentina 2009-2010. Undergraduate research fellowship

**Languages**

- ✓ Spanish (native); English (fluent); Italian (colloquial); Portuguese (notions)