

# FRANCA GIANNINI-KURINA

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POSTDOCTORAL RESEARCHER, SOIL FERTILITY SECTION, DEPARTMENT OF AGROECOLOGY, AARHUS UNIVERSITY.

## EDUCATION

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**Dr. in Agricultural Sciences**, National University of Buenos Aires, Bs As, Argentina.

Sep 2015-May 2020

Dissertation: "Methodological approaches for spatial analysis of soils herbicides retention and dissipation"

**MSc. in Applied Statistics**, National University of Cordoba, Córdoba, Argentina

Mar 2016-Aug 2021

Thesis: "Bayesian models for geostatistical data: Digital Soil Mapping with R-INLA"

**Agricultural Engineering**, National University of Cordoba, Córdoba, Argentina

Mar 2009-Feb 2015

Mention: "Quantitative methods for agricultural science"

## HONORS AND AWARDS

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**Young Statistician Award IBC** 2020

Representing South America (Argentinean Region)

Dissertation: "Two Step Procedure to Model Site Specific Herbicide Soil Persistence"

Aug 2020, International Biometric Conference IBC2020

**Teaching Award: "Your experience counts"** 2020

Second place award for pedagogical proposal of university education in a virtual context

Proposal: "Stat Labs to teach Statistics and Probability for Engineering TICS"

Jul 2020, Catholic University of Córdoba.

**Young Statistician Award CEB** 2019

Representing South America (Argentinean Region)

Dissertation: "Addressing alternative approaches for spatial modeling of herbicide retention in soil"

Aug 2020, "XVII Spanish Conference and VII Ibero-American Biometrics Meeting"

## RESEARCH EXPERIENCE

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Aarhus University, Department of Agroecology. Postdoctoral researcher April 2022-present.

Advisors: Section manager Professor Jørgen Eriksen.

Simulation modelling of soil C and N dynamics.

CONICET. Postdoctoral position. Jun 2020- March 2022  
UFYMA (Research Institute of Phytopathology and Agricultural Modeling).  
INTA-CONICET, Córdoba Argentina.  
Advisor: Professor PhD. Mónica Balzarini.  
Applied Statistics to Environmental Soil Science/Spatial Statistics.

CONICET. Doctoral Scholarship. April 2015 to May 2020  
Faculty of Agricultural Science.  
National University of Cordoba Argentina.  
Advisor: Professor Dr. Susana Hang.  
Environmental Statistics/Soil Science/Herbicides soil dynamic.

Regional Integration Scholarship Program. Argentine Ministry of Education. 2018  
College of Agricultural Sciences.  
University of Puerto Rico, Mayagüez.  
Advisor: Professor PhD. Raúl E. Macchiavelli.  
Spatial Bayesian Models.

Mobility scholarship for undergraduate students. 2013  
ESCALA Association of Universities Group Montevideo (AUGM).  
Federal University of Santa María.  
Reference: Dr. Ricardo Simão Diniz Dalmolin.  
Undergraduate experience in pedology laboratory.

## TEACHING EXPERIENCE

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### *Undergraduate positions*

Associate Professor, Faculty of Engineering, Mar 2019 - March 2022  
Catholic University of Cordoba, Argentina (UCC)  
Probability and Statistics

Thesis advisor in quantitative methods for agricultural research area. 2017-2022  
National University of Cordoba, Argentina  
Degree Agronomic Engineering, Faculty of Agricultural Science

Assistant Student Professor, Faculty of Agricultural Science. Mar 2011 to Jun 2013  
National University of Cordoba, Argentina  
Math I, Math II.

### *Postgraduate courses*

- Data Analysis from Bayesian Estimations with an Emphasis on Managing Random Effects for Spatio-Temporal Processes. Masters in applied Statistics, UNC. 2023
- Biostatistics and Experimental Design, Graduate School, UNSE. 2021 and 2022
- Statistics and Biometry, Doctorate in Genetic Improvement, UNNOBA. 2020 and 2021
- Biostatistics, Masters in food science and technology, FCQ UNC. 2020
- Statistics and Biometry, Masters in Equine Production. UNRC. 2020
- Geostatistics, Doctorate in Agricultural Science. FCA, UNC. 2019, 2020 and 2021
- Automatic Learning Algorithms with Spatial Data, Scientific Meeting of the Argentine Biometrics Group. Oct 2019, UNCUYO.
- Strategies for the statistical analysis of data with spatial correlation. II School Congress on Spatial Statistics, Applications in Agriculture and Environment. Sept 2019, UNC.
- Visualization tools for spatial data in R. Congress School of Spatial Statistics, applications in Agriculture and Environment. Dec 2018.
- Bayesian spatial models in R-INLA. Masters in applied Statistics, Dec 2018, UNC.

### **PUBLICATIONS**

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#### *Books*

Guía para el análisis de datos espaciales. Aplicaciones en agricultura. Serie: Estadística Aplicada. Mariano Córdoba; Pablo Paccioretti; **Franca Giannini-Kurina**; Cecilia Bruno; Mónica Balzarini. ISBN: 978-987-760-272-2.

<http://www.agro.unc.edu.ar/~estadisticaaplicada/GpADEAA/>

#### *Journal Papers*

Serra, J., Marques-dos-Santos, C., Marinheiro, J., Cruz, S., Cameira, M.R., de Vries, W., Dalgaard, T., Hutchings, N.J., Graversgaard, M., Giannini-Kurina, F., Lassaletta, L., Sanz-Cobena, A., Quemada, M., Aguilera, E., Medinets, S., Einarsson, R., Garnier, J. (2024). Assessing nitrate groundwater hotspots in Europe reveals an inadequate designation of Nitrate Vulnerable Zones. *Chemosphere*, 141830. <https://doi.org/10.1016/j.chemosphere.2024.141830>

Suarez, F., Bruno, C., **Giannini-Kurina, F.**, Pecci, M. P. G., Pardina, P. R., & Balzarini, M. (2023). Marriage between variable selection and prediction methods to model plant

disease risk. *European Journal of Agronomy*, 151, 126995. <https://doi.org/10.1016/j.eja.2023.126995>

Gutierrez, S., Grados, D., Møller, A. B., Gomes, L. C., Beucher, A., **Giannini-Kurina, F.**, ... & Greve, M. H. (2023). Unleashing the sequestration potential of soil organic carbon under climate and land use change scenarios in Danish agroecosystems. *Science of The Total Environment*, 166921. <https://doi.org/10.1016/j.scitotenv.2023.166921>

Borello, J. S., **Giannini-Kurina, F.**, Grassi, D. A., Tentor, G., Cañas, A. I., Nassetta, M. M., & Lepori, E. C. V. (2023). Veterinary drugs in groundwater in a dairy region of central Argentina and risk assessment for human health. *Environmental Quality Management*. <https://doi.org/10.1002/tqem.22042>

Marinelli, M. V., Argüello Caro, E. B., Petrosillo, I., **Giannini-Kurina, F.**, Giobellina, B. L., Scavuzzo, C. M., & Valente, D. (2023). Sustainable Food Supply by Peri-Urban Diversified Farms of the Agri-Food Region of Central Córdoba, Argentina. *Land*, 12(1), 101. <https://doi.org/10.3390/land12010101>

**Giannini-Kurina, F.**, Borello, J., Cañas, I., Hang, S., & Balzarini, M. (2022). Mapping atrazine persistence in soils of central Argentina using INLA. *Soil and Tillage Research*, 219, 105320. <https://doi.org/10.1016/j.still.2022.105320>

Koritschoner, J., **Giannini-Kurina, F.**, Hang, S., & Balzarini, M. (2022). Site-specific modelling of short-term soil carbon mineralization in central Argentina. *Geoderma*, 406, 115487. <https://doi.org/10.1016/j.geoderma.2021.115487>

Frasconi, J. E., **Giannini-Kurina, F.**, López Lauenstein, D., & Joseau, M. J. (2021). Análisis de estrategias de brotación de familias de polinización abierta de *Prosopis alba* Grisebach de Argentina. *AgriScientia*, 38(2), 27–40. <https://doi.org/10.31047/1668.298x.v38.n2.28610>

Paccioretti, P., Bruno, C., **Giannini-Kurina, F.**, Córdoba, M., Bullock, D. S., & Balzarini, M. (2021). Statistical models of yield in on-farm precision experimentation. *Agronomy Journal*, 113(6), 4916-4929. 2021. <https://doi.org/10.1002/agj2.20833>

**Giannini-Kurina, F.**; Koritschoner, J.; Rampoldi, A.; Balzarini, M.; Hang, S. Modelos para la conversión de las concentraciones de Fe, Mn, Cu y Zn entre los métodos Mehlich-3 y DTPA-TEA. *Ciencia del Suelo*. Buenos Aires: Asociación Argentina de la Ciencia del Suelo. 2021. 39(2). <https://ojs.suelos.org.ar/index.php/cds/article/view/658>

**Giannini-Kurina, F.**, Hang, S., Rampoldi, A. E., Paccioretti, P., & Balzarini, M. (2021). *Unveiling spatial variability in herbicide soil sorption using Bayesian digital mapping* (Vol. 50, No. 4, pp. 934-944). <https://doi.org/10.1002/jeq2.20254>.

Paccioletti, P.; **Giannini-Kurina, F.**; Balzarini, M. G. (2020). Muestreo de sitios a escala regional para mapeo digital basado en propiedades de suelo. Ciencia del Suelo. Buenos Aires: Asociación Argentina de la Ciencia del Suelo. 2020 vol.38 n°2. p310 - 320. issn 0326-3169.

Olivares, B. O; Araya-Alman, M; Acevedo-Opazo, C; REY, J. C; Cañete-Salinas, P; **Giannini-Kurina F**; Balzarini, M; Lobo, D; Navas-Corté S, J. A; Landa, B. B.; Gómez, J. A. (2020). Relationship Between Soil Properties and Banana Productivity in the Two Main Cultivation Areas in Venezuela. Journal of Soil Science and Plant Nutrition. vol.20 n°4. p2512 - 2524. <https://doi.org/10.1007/s42729-020-00317-8>

**Giannini-Kurina, F.**; Hang, S.; Macchiavelli, R.; & Balzarini, M. (2019). Spatial predictive modelling essential to assess the environmental impacts of herbicides. Geoderma, 354, 113874. <https://doi.org/10.1016/j.geoderma.2019.07.032>

**Giannini-Kurina, F.**; Balzarini, M.; Rampoldi, A.; & Hang, S. (2019). Site-specific data on herbicide soil retention and ancillary environmental variables. Data in brief, 104754. <https://doi.org/10.1016/j.dib.2019.104754>

**Giannini-Kurina, F**; Hang, S.; Cordoba, M. A.; Negro, G. J.; & Balzarini, M. G. (2018). Enhancing edaphoclimatic zoning by adding multivariate spatial statistics to regional data. Geoderma, 310, 170-177. <https://doi.org/10.1016/j.geoderma.2017.09.011>

### *International Conference Papers dissertation*

Joint spatial modeling of soil regulation functions to herbicide applications. "31st International Biometric Conference". Riga, Latvia, Jul 2022

Addressing alternative approaches for spatial modeling of herbicide retention in soil. XVII "XVII Spanish Conference and VII Ibero-American Biometrics Meeting CEB-EIB 2019". Valence, Jul 2019.

Predictive modeling of glyphosate adsorption coefficient in agricultural soils. "XXIX International Biometric Conference". Barcelona, Jul 2018.

### **ACADEMIC AFFILIATIONS**

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**IBS.** International Biometric Society, Argentine region, 2018 - Present

**AACS.** Argentine Association of Soil Science, 2019-Present

### **PROFESSIONAL SERVICE**

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**Symposium Co-Organizer**

Spatial Statistics applications in Agriculture and Environment Workshop, Córdoba  
2018 and 2019

Jornadas Nacionales de Suelos de Ambientes Semiáridos, Córdoba 2019

**Peer-Reviewed activities:**

- Nutrient Cycling in Agroecosystems
- European Journal of Soil Science
- AgriScientia
- Frontiers in Environmental Science

**Statistical consulting**

Project: Soils of Cordoba: foundations of genuine growth.	2018-2022
Inputs trials horticulture and grain production <i>Agroalliance</i> .	2017-2019
Xylella fastidiosa incidence, <i>INTA-IPAVE</i> .	2020
Team Consulting: Spatial modeling of COVID-19 incidence in Cordoba, Arg.	2020
Sampling the Ichtic fauna of Ctalamochita " <i>Fundación Río Ctalamochita</i> ".	2021
Project: Basin in figures. Commission of Agricultural Entities (CEEA).	2020-2022
Zonning protocol and automatization for SOC monitoring. <i>Ruuts,Ovis</i> .	2021-2022
Sensitivity analysis on cabon dynamic models. <i>Ruuts,Ovis</i> .	2023

**COMMUNITY SERVICE**

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<b>Committee member</b> at Diversity and gender equality committee AU Agroecology department Aarhus University.	2023
<b>Student counsellor</b> (elected position) at the board of Agricultural Science Faculty, UNC.	2014-2015
<b>Student counsellor</b> at the career commission board. Agricultural Engineering, UNC.	2013-2015
<b>Volunteer</b> promoting neighborhood gardens for self-sufficiency Surcos Argentinos organization, Cordoba. Technical leader.	2011-2014

**LANGUAGES**

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**Spanish:** Native Language  
**English:** C1  
**Portuguese:** B2  
**French:** A1

## OTHER

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Advance Programming Skills in R.  
Basic Programming Skills in SAS, Python and Julia.  
Advanced knowledge in Cartography and Orienteering skills.  
GIS software (QGIS, ArcGIS, ENVI) working experience.  
First aid and emergencies training.  
Academic and sporting events leading organization experience.

## REFERENCES

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Professor Jørgen Eriksen. Mobil: +4551680554. e-mail: [jorgen.eriksen@agro.au.dk](mailto:jorgen.eriksen@agro.au.dk). Section leader Soil and Fertility section, Agroecology department, Aarhus University.

Professor Monica Balzarini. Mobil: +5493512655060. e-mail: [monica.balzarini@unc.edu.ar](mailto:monica.balzarini@unc.edu.ar). Vice director CONICET, Córdoba. Agricultural College. National University of Córdoba.

Professor Raúl E. Macchiavelli. Mobil: +17873835278. e-mail: [raul.macchiavelli@upr.edu](mailto:raul.macchiavelli@upr.edu). Dean and Director. College of Agricultural Sciences University of Puerto Rico recinto Mayagüez.

Professor Susana Hang. Mobil: +5493513130302. e-mail: [shang@agro.unc.edu.ar](mailto:shang@agro.unc.edu.ar). Science and Technology director. Agricultural College. National University of Córdoba.