

## Attachment 'C'

# University Academic Curriculum Vitae

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### Personal information

Name MONICA FERNANDA RINALDI  
Place and –date of birth: GENERAL ROCA – 01/10/1973  
Nationality: ITALIAN  
Address: Ytterbystrandsvägen 7 - 185 94 Vaxholm - Sweden  
Telephone numbers:

- Mobile: +46 (0) 72 011 80 97
- Private:
- Office:

Fax:  
E-Mail: [monica.rinaldi@gmail.com](mailto:monica.rinaldi@gmail.com)

### Education since leaving school

- 2002' Degree in Agronomic Engineering - Faculty of Agricultural Sciences - National University of Córdoba – Argentina.
- 2006' Specialist degree in Remote Sensing and Geographic Information Systems; UN/Regional Centre for Space Sciences and Technology Education in Latin America and the Caribbean - CRECTEALC/Brazil Campus - INPE - National Institute for Space Research; Monograph: Geotecnología para la validación espacio-temporal de la sanidad frutícola en Valle de Río Negro – Argentina, mediante el uso de Normalized Difference Vegetation's Index -NDVI y Enhanced Vegetation Index - EVI. (INPE-14495-PUD/179). Available at: <http://urlib.net/sid.inpe.br/mtc-m19/2011/02.17.17.52>.
- 2007' Levelling course for scholarships holders of the Italian government to be carried out in the Mario Gulich Institute - Teófilo Tabanera Space Center - CONAE, Córdoba - Argentina - March 12 to March 31 and April 10 to May 5, 2007.
- 2007' Applications of Space Technology to Health and Emergencies by means of Calculation of High Benefit - Italian-Argentine Cooperation Program within the frame of the Italian-Argentine Satellite System for Emergency Management (SIASGE) between the Italian Space Agency (ASI) and the National Commission on Space Activities (CONAE) - Fondazione Bruno Kessler (FBK) – Predictive Models for Biomedicine & Environment (MPBA) - Trento - Italy, July 21 to December 21, 2007.
- 2012' Stage period in Universitat Politècnica de Catalunya - Department of Agro-Food Engineering and Biotechnology - Barcelona - Spain, March to September 2012. Electronic characterization of the phenological stages of grapevine using a LIDAR sensor.
- 2009-2013' PhD at the Doctoral School on the Agro-Food System - Cycle XXV - Catholic University of Sacre Coeur - UCSC - Italy. Matr.n.: 3811003. Thesis title: Modelling the impact of the climate change on the interaction between host, pest/pathogen phenologies at regional level: 'Trentino'- Italy.

- 2014' UN CC: Learn Introductory e-Course on Climate Change. Present appointment Professional experience Swiss Government. 6 Modules are completed.

**Present appointment**

Unemployed

**Professional experience**

From / to	Job title	Name of academic Institution	Academic level	responsibilities
Jun/Jul 2014	Consultancy	JTI – Swedish Institute of Agricultural and Environmental Engineering - Sweden		Consultancy to analyse LIDAR and UAS images in willow production.
May 2013	Consultancy	Horta s.r.l. - Italy		Modelling and GIS Consultant.
Apr 2009/Apr 2013	Temporary contract	Fondazione Edmund Mach (FEM) / Istituto Agrario di San Michele All'Adige (IASMA), Italy		Modelling the impact of climate change on agricultural pests and diseases using large weather datasets and open source software like R/GRASS under the Envirochange Project. Work in IASMA and Fondazione Bruno Kessler (FBK) - Predictive Models for Biomedicine & Environment (MPBA). Development of user-friendly maps in web-GIS called Enviro.
Mar/Sep 2011	Consultant Contract	United Nations (UN).		Information and Communication Technologies (ICT) and Agriculture in Latin America. ICT, Risk management and Environmental sustainability in Agriculture.
Dec 2006/ Mar 2009	Contract	National Health Service and Agro-		Development of the Geographic Information

		Food Quality (SENASA), Argentina		Systems (GIS) area in agriculture pest control. GIS techniques in agricultural pests. Traceability. Pest control. Information and Communications Technology (ICT) tools and piloting of web-GIS to monitor agriculture pests in real time. Taught a training course in remote sensing (RS).
Aug 2005 - Dec 2006		Service and Agro-Food Quality (SENASA), Argentina		GIS and geo-statistics use in pest management. Taught a training course in practical uses of handheld GPS and cartography. Provided geo-referencing training. Inspector. Taught a training course in Arcview and GIS tools. Provided training in pest maps, projections and coordinate systems. Development of ICT tools (data management). Modelling pest of plants.
Sep 2002 – Oct 2003		Precision Agriculture Project - National Institute of Agricultural Technology (INTA) – Manfredi Córdoba, Argentina		Research position in Precision Agriculture (PA). Assays management with variable rate applications (seeding - fertilization) in maize, soybean and wheat. Geo-statistical and spatial statistics for land use management. Calibration and validation of the Crop Environment Resource Synthesis (CERES) model (nutrients and water). Crop and yield monitoring with PA tools (yield monitor - DGPS). Yield maps. Part of the organizing committee during the 3rd and 4th Courses on Precision Agriculture, Córdoba and the International Workshop on Precision Agriculture - Villa Carlos Paz, Córdoba. Precision Agriculture consultant in agricultural exhibitions: Agro-Córdoba, Agroactiva, Agronea.
		Precision Agriculture Project - National Institute of Agricultural Technology (INTA) – Manfredi Córdoba, Argentina		Training position in Precision Agriculture Project. DGPS use, yield monitor calibration prescription maps for variable-rate application (maize, soybean, wheat).

**Participation in exhibitions (where applicable)**

Rinaldi, M., Llorens, J., Gil, E., 2013. Electronic characterization of the phenological stages of grapevine using LIDAR sensor. Visualization in 3D maps with GRASS® and R®, open source tools. Oral presentation. 9th European Conference on Precision Agriculture, Lleida, Catalonia, Spain.

**Experience in academic teaching**

**Other academic responsibilities**

- Internal meetings of Envirochange project – Fondazione Edmund Mach – Italy and University of Zurich – Switzerland.
- Collaboration with Fondazione Bruno Kessler – FBK.
- Organizing committee of Future IPM in Europe, Riva del Garda - Italy, 19-21 March 2013, Fondazione Edmund Mach (FEM) – Italy.

**Memberships**

**Research and scholarships**

Date granted	Award Holder(s)	Funding Body	Title	Amount received
10/03/2009		Fondazione Edmund Mach	Borsa di studio per attività di ricerca per un progetto di dottorato per modellista ecologo	Rate mensili da 1667.67 euro per quattro anni
2006/2007		Governo Italiano / CONAE Comision Nacional de Actividades Espaciales	Sistema Italo-Argentino de Satelites para la Gestion de Emergencias (SIASGE)	Rate mensili da 1575 euro per sette mesi

**Publications**

- *Rinaldi, M., Llorens, J., Gil, E., 2013. Electronic characterization of the phenological stages of grapevine using LIDAR sensor. Precision agriculture '13. Editors: John V. Stafford. pp: 603-609. ISBN: 978-90-8686-778-3.*
- *Rinaldi, M. F., 2013. PROTOLIDAR. Package R. Available <<http://cran.r-project.org/web/packages/PROTOLIDAR/index.html>>*
- *Rinaldi, M., De Filippi, R., Caffarra, A., Droghetti, S., Zarbo, C., Eccel, E., Furlanello, C., Pertot, I., 2013. A web-gis decision support system for parasite control in alpine regions: applications to grapevine phenology and modelling of European grapevine moth. Abstract/poster Future IPM in Europe, Riva del Garda, 19-21 March 2013:259.*
- *De Filippi, R., Droghetti, S., Zarbo, C., Poletti, M., Pertot, I., Rinaldi, M., Caffarra, A., Eccel, E., Furlanello, C., 2013. ENVIRO an*

innovative web mapping tool to monitor and forecast plant and pests dynamics based on climate data. Abstract/oral presentation: Future IPM in Europe, Riva del Garda, 19-21 March 2013:84.

- E Eccel, A Caffarra, E Cordano, *M Rinaldi*, V Rossi, R De Filippi, S Droghetti, C Zarbo, C Furlanello, M Storari, C Gessler, R Tomozeiu, I Pertot, 2012: ENVIROCHANGE: Simulazione degli effetti fitosanitari del cambiamento climatico sulla vite in Trentino. Italian Journal of Agrometeorology, Extended Abstracts del XV Convegno Nazionale di Agrometeorologia, Palermo, 5-7 giugno 2012:43-44.
- A Caffarra, *M Rinaldi*, E Eccel, I Pertot, 2012: Cambiamento climatico e tignoletta della vite: come cambierà l'interazione pianta parassita in Trentino? Extended Abstracts del XV Convegno Nazionale di Agrometeorologia, Palermo, 5-7 giugno 2012:39-40.
- *Rinaldi M.* 2013. Modelling the impact of climate change on the interaction between host and pests / pathogens phenologies at Regional level: 'Trentino' - Italy. Doctoral thesis in Agrisystem - UNICATT - Italy. Available <<http://tesionline.unicatt.it/handle/10280/1747?mode=full> >
- Caffarra A, *Rinaldi M*, Eccel E, Rossi V, Pertot I. 2012. Modelling the impact of climate change on the interaction between grapevine and its pests and pathogens: European grapevine moth and powdery mildew. Agriculture Ecosystems & Environment. 148, 89-101.
- *Rinaldi M. F.*, 2007. Geotecnología para la validación espacio-temporal de la sanidad frutícola en Valle de Río Negro – Argentina, mediante el uso de Normalized Difference Vegetations Index - NDVI y Enhanced Vegetation Index – EVI. São José dos Campos: INPE, 2007. 46 p. (INPE-14495-PUD/179). Available at: <<http://urlib.net/sid.inpe.br/mtc-m19/2011/02.17.17.52>>.
- *Rinaldi, M.F.*, Moreira, A.M., 2007. Geotecnología para la validación espacio-temporal de la sanidad frutícola en Valle de Río Negro – Argentina, mediante el uso de Normalized Difference Vegetations Index - NDVI y Enhanced Vegetation Index – EVI. XIII SBSR.
- Dardanelli J., Andriani J., *Rinaldi M.*, 2003. La disponibilidad hídrica y la respuesta del cultivo de soja. Congreso Nacional de Soja – AAPRESID.
- Bragachini M., Bongiovanni R., Méndez A., *Rinaldi M.*, Scaramuzza, F., Peiretti, J., 2003. Folleto de divulgación Tecnología en Agricultura de Precisión.
- Bragachini M., von Martini A., Méndez A., *Rinaldi M.*, 2003. Manejo sitio específico de cultivos extensivos: Equipamiento para siembra y fertilización variable en forma independiente. Revista INTA Proyecto de Agricultura de Precisión.
- Bragachini M., Bongiovanni R., von Martini A., Méndez A., *Rinaldi*

*M.*, 2003. Eficiencia de cosecha y post-cosecha. INTA Proyecto de Agricultura de Precisión.

- Bragachini M., Bongiovanni R., von Martini A., Méndez A., *Rinaldi M.*, 2003. Almacenamiento de granos secos en silo bolsa. INTA Proyecto de Agricultura de precisión.
- Bragachini M., Bongiovanni R., von Martini A., Méndez A., *Rinaldi M.*, 2003. Evolución del mercado de maquinaria agrícola en Argentina. INTA Proyecto de Agricultura de Precisión.
- Bragachini M., von Martini A., Méndez A., *Rinaldi M.*, 2003. Tolvas autodescargables. INTA Proyecto de Agricultura de Precisión.
- Bragachini M., von Martini A., Méndez A., *Rinaldi M.*, 2003. Los fierros apuntan hacia arriba. Revista Agro Propuesta Año 2 N° 11 (pág. 12-15).
- Bragachini M., Bongiovanni R., von Martini A., Méndez A., *Rinaldi M.*, 2003. Hechos para cargar. Revista Agro Propuesta Año 2 N° 11 (pág. 20-28).
- Bragachini M., Bongiovanni R., Méndez A., *Rinaldi M.*, Scaramuzza F., Peiretti J., 2003. Folleto de divulgación Campaña Nacional de eficiencia de cosecha y post-cosecha de granos.

**Publications about  
the applicant**

**Further data**

Rinaldi, M., Llorens, J., Gil, E., 2013. Electronic characterization of the phenological stages of grapevine using LIDAR sensor. Visualization in 3D maps with GRASS® and R®, open source tools. Oral presentation. 9th European Conference on Precision Agriculture, Lleida, Catalonia, Spain.

**Entrepreneurship**

**Statement  
interest**

**of** The position at Faculty of Science and Technology in the research project "WEQUAL - WEb Service Centre for a QUALity multidimensional design and teleoperated monitoring of Green Infrastructures; ALPITec - Alpine Technologies (Development of a Technological Network)" allows me to work in an innovative environment, in a transdisciplinary team, connecting reality on the ground to research, piloting and developing tools and knowledge that enable paths of communication between a diverse group of stakeholders.

I believe that my profile is interesting for this position. I have

experience in working with Precision Agriculture (PA), Geographic Information Systems (GIS), mathematical modelling (host-pest/disease-environment), remote sensing data (LIDAR, LANDSAT, MODIS, UAS), web-gis and climate change. As a result of these experiences, I have acquired a number of skills that make my profile well-suited to the requirements of this call and the area of work. Having taken a step back from work in the past years due to family reasons, I would be thrilled to be able to thrive again in a high performing work environment.

Regarding my background, I am an agricultural engineer, with a PhD at the Doctoral School on the Agro-Food System in Piacenza Italy. During my research, which focused on modelling the impact of the climate change on pest/disease interaction in grapevine and apple in the Trentino region in Italy, I worked at 200 meters of spatial resolution and hourly and daily temporal scale. More specifically, I produced phenological maps at hourly or daily temporal scale in a web-GIS platform targeting farmers, agronomists and other end users. Weather data at hourly and daily detail (temperature and precipitation) were interpolated at 200 meters of resolution, and overlapped with phenological models of the host (grape, apple), pest (*Lobesia botrana*) and pathogens (*Uncinula necator*). Other output provided within the web-GIS platform showed the climate data ENSEMBLES, which was downscaled at daily scale and overlapped with phenological models, in order to help the decision makers in a long-term vision.

In addition, I have excellent experience in working with high-resolution spatial scale and models in precision agriculture for sustainability of the environment, using GIS, GPS, variable rate doses and yield monitor (maize, wheat and soybean), as well as LIDAR and UAS data (in willow production and grapevine). I recently supported a team from Bavendorf in Germany (Postharvest Storage Workgroup) with LIDAR data of cherries to develop a 3D view to obtain TRV using PROTOLIDAR (R package), which I developed based on my experience gained at the Universitat Politècnica de Catalunya Spain (Department of Agro-Food Engineering and Biotechnology). This package helped agricultural producers to be more accurate in controlling diseases/pests, in line with the European Directive 128 that calls for a sustainable use of pesticides to ensure the welfare of the society.

When conducting research at the National Institute for Space Research (INPE) in Brazil, I used satellite imagery MODIS (NDVI-EVI) and Landsat, related to pest in apple production at regional level in Patagonia (Argentina).

When working for National Health Service and Agro-Food Quality (SENASA) in Argentina, I created maps using GIS giving weekly scale data of pest of fruit trees, which enabled technicians to implement Integrated Pest Management (IPM). The intervention strategy was based on surveillance and phytosanitary alertness, phytosanitary control and technology training. Beneficiaries of the IPM training were 4.194 'family producers' in Patagonia.

Since 2006 I have been using open source software such as GRASS, R, PostgreSQL and Python. In addition to these, I developed and implemented a package called PROTOLIDAR in R, creating 3D maps for each phenological stage of grapevine in GRASS. I scanned the grapevine with LIDAR LMS-200 model (Sick, Dusseldorf, Germany).

Regarding commercial software, I worked with Farm Work (Precision agriculture), ArcGIS/Arc View, ENVI and instruments like DGPS (Trimble and Topcon).

I have always been passionate about analyzing datasets and translating them into user-friendly tools based on models and maps, targeting decision makers and relevant stakeholders at regional and local level. I find it fascinating to examine statistics at global, regional or site-specific spatial scale as well as different temporal scales (yearly, monthly, daily and hourly) and gather all information to build usable maps into web-GIS. Being able to work with large datasets and different ICT tools gives me the opportunity to ensure real time output as well as to standardize data and share it with end-users and relevant stakeholders at different levels.

In any job I envision a holistic and participatory approach, embracing interdisciplinary team-work as key for success. I am extremely motivated, organized and disciplined in my work. I am creative and enjoy working with colleagues, ensuring high quality of work.

**Language  
competence**

Mother Language: Spanish / Italian

Other Language: English (B2 level in 2015) / Swedish (D4 – SFINX)

Date Resarö, 01/11/2018

Signature