

# CURRICULUM VITAE

**Name:** Francesco Lami

**Date of birth:** 24/01/1990

**Place of birth:** Bologna (Italy)

**Citizenship:** Italian

## CAREER OVERVIEW

I am an early-career researcher with experience in the fields of biodiversity in agricultural ecosystems, landscape ecology and ecosystem services, with a particular focus on insects as model organisms.

I obtained a Bachelor's degree in Biology (2012) and a Master's Degree in Biodiversity and Evolution (2014) at the University of Bologna, in both cases with a thesis on **insect biodiversity in agroecosystems** (Coccinellidae and ground-dwelling beetles) based on research experiences at the Department of Agricultural Sciences of Bologna under the supervision of Prof. Giovanni Burgio. After the Master's Degree, I continued to take part in research (on field, in the lab and in preparing manuscripts) as a postgraduate intern at the same Department for almost 2 years (2015-2017), focusing particularly on **the invasive species *Harmonia axyridis*, the Harlequin Ladybird**.

I obtained my PhD in Crop Science from the University of Padua (2020) under the supervision of Prof. Lorenzo Marini. The main focus of my PhD thesis was the development of a novel **species-habitat network** analytical approach to investigate the interactions between entire biotic communities and the landscape mosaic. I gathered large arthropod datasets during extensive sampling campaigns (Carabidae, Araneae) and through international cooperation (Apoidea, Syrphidae), and applied the network approach to elucidate the effects of landscape features on arthropod habitat use. I also investigated **ecosystem services** provided by arthropods, with a particular focus on seed predation.

During my PhD I had the chance to spend 4 months (2019) at the *Estación Biológica de Doñana*, a state-of-the-art biodiversity research centre in Seville (Spain). I worked closely to further develop the species-habitat network approach with the group of Dr. Ignasi Bartomeous, which specializes in **pollinator ecology** and mutualistic interactions.

After completing my PhD, I won a research grant at the University of Udine (2019-2021) under the supervision of Dr. Maurizia Sigura, as part of the Interreg Project GREVISLIN between Italy and Slovenia. The aim was to plan a **Green Infrastructure Network** through GIS and graph theory-based analyses for the protection of biodiversity in the Isonzo river area, with a particular focus on endangered Lepidoptera. Later, I won a second grant at the same University (2021) with Dr. Francesco Boscutti; in this case the project was based on the **effects of cover crops on pollinators, weed control and other ecosystem services**. Concurrently, I continued to develop the species-habitat network approach by applying it to the study of **biological invasion patterns**.

I'm currently a research assistant at the University of Bologna under the supervision of Dr. Antonio Masetti, working on the evaluation of **sustainable management methods for native and alien insect pests**, including agroecological approaches, biological control and insecticidal essential oils, with a focus on the invasive **Brown Marmorated Stink Bug (*Halyomorpha halys*)**.

Outside of academic research, I also worked as an **entomology consultant** for a private company (Euroequipe S.R.L.), field-testing lures and traps for mosquitoes and other pest insects (2020-2021). I also have experience in **science communication**, which I gained mainly by working on a science popularization webpage (Facebook: <https://www.facebook.com/ilvolodeldodo>) (2013-current) and as a local organizer for the international scientific education event Pint of Science (<https://pintofscience.com/>) (2017-2021).

## PROFESSIONAL AND COMMUNICATION SKILLS

- Experience in arthropod field sampling (pitfall traps, frapping, entomological net, fly net, visual survey, sticky traps) and arthropod activity monitoring (seed cards, dummy caterpillars).
- Preparation and conservation of arthropod samples.
- Taxonomic determination of arthropods by morphological traits, with a focus on beetle families Carabidae and Coccinellidae.
- Insect rearing in climate chambers (lady beetles, aphids, true bugs).
- Data analysis.
- Scientific manuscript writing.
- Clear and synthetic oral presentation through PowerPoint slides.
- Science communication to non-specialist audiences, both in written and oral form.

## ACADEMIC EDUCATION

- **PhD** (2020) in Crop Science at the University of Padua (Supervisor: Prof. Lorenzo Marini), with a thesis titled *“Bridging applied ecology and network theory to improve landscape management for conservation”* – **Evaluation: Excellent**
- **Visiting PhD Student** (2019) at the Estación Biológica de Doñana (Sevilla, Spain) to develop the species-habitat network approach (PhD supervisor Prof. Lorenzo Marini; Local supervisor: Dr. Ignasi Bartomeus)
- **Master’s Degree** (2014) in Biodiversity and Evolution at the University of Bologna, with a thesis titled *“Coleotteri del terreno negli agroecosistemi maidicoli dell’Emilia-Romagna: potenzialità come bioindicatori”* (Supervisor: Prof. Giovanni Burgio) – **Evaluation: 110/110 cum laude**
- **Bachelor’s Degree** (2012) in Biological Sciences at the University of Bologna, with a thesis titled *“Coleotteri Coccinellidi in agroecosistemi maidicoli all’interno di aree protette: ruolo delle infrastrutture ecologiche e possibili impatti di piante GM”* (Supervisor: Prof. Giovanni Burgio) – **Evaluation: 110/110 cum laude**

## RESEARCH EXPERIENCES

- **Research grant** (2021 – current) at the University of Bologna (Supervisor: Dr. Antonio Masetti): “Integration of natural insecticides, biological control agents and agroecological approaches for the management of pest insects in agricultural areas” (PSR Projects HALY.BIO and BIONATURE)
- **Research grant** (2021) at the University of Udine (Supervisor: Dr. Francesco Boscutti): “Cover crops effects on biodiversity and agronomic and ecosystem services in agricultural and rural landscapes” (joint project of the DI4A Department at the University of Udine and the ERSA agency)
- **Research grant** (2019-2021) at the University of Udine (Supervisor: Dr. Maurizia Sigura): “Green infrastructures for the conservation and improvement of the condition of habitats and protected species along the rivers” (GREVISLIN Interreg Project)
- **Freelance contract** (2017) at the University of Bologna (Supervisor: Prof. Giovanni Burgio): “Study of soil biodiversity through bioindicators” (MIPAAF Project SOILVEG)
- **Freelance contract** (2016) at the University of Bologna (Supervisor: Prof. Giovanni Burgio): “Identification of bioindicator beetles with a focus on Staphylinidae” (MIPAAF Project BIOSEMED)
- **Postgraduate internship** (2015-2017) at the Department of Agricultural Sciences (Entomology section) of the University of Bologna (Supervisor: Prof. Giovanni Burgio)

## ACADEMIC TEACHING

- Teaching assistant during field-based workshops and final exams for the Geomatics course of the University of Udine.
- Co-supervisor for a MSc thesis and a BSc thesis at the Department of Agricultural Sciences at the University of Bologna.
- Organizer of taxonomy workshops and speaker at seminars for the Agricultural Entomology course of the University of Bologna.

## OTHER PROFESSIONAL EXPERIENCES

- **Multiple freelance contracts** (2020-2021) as an entomology consultant for Euroequipe S.R.L. (Employer: Paolo De Nora). Main tasks: field testing of traps and lures aimed at mosquitoes and other insect pests, management of the social media pages of the company.

## SCIENCE COMMUNICATION

- **Writer, illustrator, host and manager** (2013-current) for the biodiversity-focused blog, Facebook page, Instagram page and Youtube Channel “Il Volo del Dodo” (Facebook: <https://www.facebook.com/ilvolodeldodo/>)
- **Author** of the entomology article “La personalità può aiutare l’agricoltura” in the weekly newspaper *L’Essenziale* (February 12th, 2022).
- **Organizer** (2017-2022) and **social media manager** (2020-2022) for the Bologna section of the international science communication festival “Pint of Science”
- **Two-times winner** (2017-2018) of the “3 minutes contest” (a 3-minute oral presentation of the PhD research of the candidate) at the Crop Science PhD Winter School of the University of Padova.
- **Speaker** (2017) for the “Caffè Minerva” science communication event in Bologna, with a talk about land sharing and land sparing in the conservation of biodiversity.
- **Winner** (2016) of the 1<sup>st</sup> and 3<sup>rd</sup> prize at the “EVODiAMoND Graphics” competition for the best visual aid aimed at communicating evolutionary science (University of Pisa).

## SPECIALISTIC TRAINING (Courses, Winter/Summer Schools)

- Crop Science PhD Winter School (January 2017 and January 2018) – Paluzza (UD).
- International Summer School “A primer in ecological networks – Data and theory”, University of Parma (June 13 – 15, 2017)
- 1st PhD Winter School in Ecology and Evolution – “Climate change: ecological and evolutionary responses of species and communities”, 9-10 febbraio 2017, Chioggia (February 9 – 10, 2017).
- DEST course: “Training program in Entomology (special. Diptera Syrphidae), emphasis on collection management and bioindicator use”, Museo Civico di Storia Naturale di Ferrara (June 29 – July 3, 2015)

## PARTICIPATION TO CONGRESSES

- AIIA Section II Meeting “Sistemi rurali resilienti e sostenibili: dall’azienda al territorio”, Udine (February 20 – 21, 2020).
- XVI Annual Meeting of the Spanish Group for Floral Ecology (EcoFlor), Granada (March 14 – 16, 2019).
- XI European Congress of Entomology, Napoli (July 2 – 6, 2018).
- XXV Italian National Congress of Entomology, Padova (June 20 – 24, 2016).
- “Ecology at the interface” - 13<sup>th</sup> European Ecological Federation and 25<sup>th</sup> Italian Society of Ecology joint conference, Roma (September 21 – 25, 2015)
- “L’Ecologia oggi: Responsabilità e Governance” - XXIV Congress of the Italian Society of Ecology, Ferrara (September 15 – 17, 2014)

## OTHER RELEVANT TITLES AND EXPERIENCES

- Referee for the following scientific journals: *Oecologia*; *Agriculture, Ecosystems & Environment*; *Basic and Applied Ecology*; *Phytoparasitica*; *Agricultural and Forest Entomology*; *Agronomy*.
- Doctor Europaeus.
- Organization assistant for the AIIA Section II Meeting “Sistemi rurali resilienti e sostenibili: dall’azienda al territorio”, Udine (February 20 – 21, 2020).
- PhD student representative in the Crop Science PhD academic senate (2017 - 2018).
- 24 CFU course for teaching.

## INFORMATIC SKILLS

- Microsoft Office (Word, Excel, PowerPoint)
- R, with a focus on the “bipartite” package
- QGIS
- Inkscape
- GIMP
- Graphab
- InVEST


## LANGUAGE SKILLS AND CERTIFICATES

**Italian:** Native speaker

**English:** Excellent (Listening C1, Reading C2, Speaking C2, Writing C2)

- TOEFL iBT (2015): 115/120 (Reading: 30/30; Listening: 28/30; Speaking: 28/30; Writing: 29/30)
- First Certificate in English, Grade A

## PUBLICATIONS IN PEER-REVIEWED JOURNALS

- Cappellari, A., Santoiemma, G., Sanna, F., D’Ascenzo, D., Mori, N., **Lami, F.** & Marini, L. Spatio-temporal dynamics of vectors of *Xylella fastidiosa* subsp. *pauca* across heterogeneous landscapes. *Entomologia Generalis*, doi: 10.1127/entomologia/2022/1427.
- Boscutti, F., **Lami, F.**, Pellegrini, E., Buccheri, M., Busato, F., Martini, F., Sibella, R., Sigura, M. & Marini, L. (2022) Urban sprawl facilitates invasions of exotic plants across multiple spatial scales. *Biological Invasions*, doi: <https://doi.org/10.1007/s10530-022-02733-6>.
- **Lami, F.**, Vitti, S., Marini, L., Pellegrini, E., Casolo, V., Trotta, G., Sigura, M. & Boscutti, F. (2021). Habitat type and community age as barriers to alien plant invasions in coastal species-habitat networks. *Ecological Indicators*, 133, 108450, doi: 10.1016/j.ecolind.2021.108450.
- Corcos, D., **Lami, F.**, Nardi, D., Boscutti, F., Sigura, M., Giannone, F., Pantini, P., Tagliapietra, A., Busato, F., Sibella, R., & Marini, L. (2021) Cross-taxon congruence between predatory arthropods and plants across Mediterranean agricultural landscapes. *Ecological Indicators*, 123, 107366, doi: 10.1016/j.ecolind.2021.107366
- **Lami, F.**, Bartomeus, I., Beduschi, T., Boscutti, F., Nardi, D., Pantini, P., Santoiemma, G., Scherber, C., Tschardtke, T., & Marini, L. (2021). Species-habitat networks elucidate landscape effects on habitat specialization of natural enemies and pollinators. *Ecology Letters*, 24(2), 288-297, doi: 10.1111/ele.13642
- **Lami, F.**, Boscutti, F., Masin, R., Sigura, M. & Marini, L. (2020). Seed predation intensity and stability in agro-ecosystems: Role of predator diversity and soil disturbance. *Agriculture, Ecosystems & Environment*, vol. 288, 106720. ISSN: 0167-8809, doi: 10.1016/j.agee.2019.106720
- Honek A., Brown P. M. J., Martinkova Z., Skuhrovec J., Brabec M., Burgio G., Evans E. W., Fournier M., Grez A. A., Kulfan J., **Lami F.**, Lucas E., Lumbierres B., Masetti A., Mogilevich T., Orlova-Bienkowskaja M., Phillips W. M., Pons X., Strobach J., Viglasova S., Zach P. & Zaviezo T. (2020). Factors determining variation in colour morph frequencies in invasive *Harmonia axyridis* populations. *Biological Invasions*, vol. 22, p. 2049-2062. ISSN: 1387-3547, doi: 10.1007/s10530-020-02238-0
- Nardi, D., **Lami, F.**, Pantini, P. & Marini, L. (2019). Using species-habitat networks to inform agricultural landscape management for spiders. *Biological Conservation*, vol. 239, 108275. ISSN: 0006-3207, doi: 10.1016/j.biocon.2019.108275
-  Marini, L., Bartomeus, I., Rader, R., & **Lami, F.** (2019) Species-habitat networks: A tool to improve landscape management for conservation. *Journal of Applied Ecology* 56 (4), 923-928. ISSN: 0021-8901, doi: 10.1111/1365-2664.13337

- Masetti, A., Magagnoli, S., **Lami, F.**, Lanzoni, A., & Burgio, G. (2018). Long term changes in the communities of native ladybirds in Northern Italy: impact of the invasive species *Harmonia axyridis* (Pallas). *BioControl*, 63(5), 665-675. ISSN: 1386-6141, doi: 10.1007/s10526-018-9891-7.
- Tamburini, G., **Lami, F.**, & Marini, L. (2017). Pollination benefits are maximized at intermediate nutrient levels. *Proc. R. Soc. B*, 284(1860), 20170729. ISSN: 0962-8452, doi: 10.1098/rspb.2017.0729
- **Lami, F.**, Masetti, A., Neri, U., Lener, M., Staiano, G., Arpaia S. & Burgio, G. (2016). Diversity of Coccinellidae in Ecological Compensation Areas of Italy and overlapping with maize pollen shedding period. *Bulletin of Insectology* 69 (1): 49 – 57. ISSN: 1721-8861, Scopus ID: 2-s2.0-84988354630.

## CONTRIBUTIONS TO CONGRESSES

- Rainis, S., Fabro, M., Danielis, R., Boscutti, F., Sigura, M., **Lami, F.** & Vuerich, M. (2021). Effectiveness of cover crops for supporting biodiversity and agronomic and ecosystem services in agricultural and rural landscapes. Poster – 24<sup>th</sup> Congress of the Animal Science and Production Association, Padova.
- **Lami, F.** & Marini, L. (2018). The species-habitat network: a novel approach to the study of habitat use. Oral presentation – XI European Congress of Entomology, Napoli.
- Masetti, A., Magagnoli, S., **Lami, F.**, Lanzoni, A. & Burgio, G. (2018). Long term changes in the communities of native ladybirds in Northern Italy: impact of the invasive species *Harmonia axyridis* (Pallas). Oral presentation – XI European Congress of Entomology, Napoli.
- Masetti, A., Magagnoli, S., **Lami, F.**, Lanzoni, A. & Burgio, G. (2016). Variazioni sul lungo periodo delle comunità di coccinellidi nella pianura bolognese: possibili impatti di *Harmonia axyridis* (Pallas). Oral presentation – XXV Congresso Nazionale Italiano di Entomologia, Padova.
- **Lami, F.**, Masetti, A., Sommaggio, D. & Burgio, G. (2015). Ground-dwelling beetles in maize agroecosystems of Northern Italy: their potential as biodiversity indicators. Poster – Ecology at the interface, 13th European Ecological Federation and 25th Società Italiana di Ecologia joint conference, Roma. Book of abstracts p. 542.
- **Lami, F.**, Masetti, A., Staiano, G., Lener, M., Rastelli, V., Neri, U., Arpaia S. & Burgio, G. (2014). Lady Beetles (Coleoptera: Coccinellidae) in Ecological Compensation Areas surrounding maize fields: chance of exposure to Bt toxins through pollen feeding. Poster – XXIV Congresso della Società Italiana di Ecologia, Ferrara. Book of abstracts p. 55.

## OTHER PUBLICATIONS

- **Lami, F.** & Marini, L. (2022, February 12th). La personalità può aiutare l'agricoltura. *L'Essenziale*, (14).
- Sigura, M., **Lami, F.**, Zandigiacomo, P., Piani, L., Boscutti, F., Peccol, E., Iervolino, D. & Casagrande, G. (2022). Un progetto transfrontaliero per lo sviluppo e gestione di infrastrutture verdi nei bacini fluviali dell'Isonzo e del Vipacco. In *Consumo di suolo, servizi ecosistemici e Green Infrastructures – Rapporto CRCS 2022* (pp. 187 – 193), Arcidiacono, A. et al., INU Edizioni Srl, Roma. ISBN: 978-88-7603-233-2.
- Rainis, S., Fabro, M., Danielis, R., Dorigo, G., **Lami, F.**, Vuerich, M. & Boscutti, F. (2021). Potenziale contributo in termini di servizi agronomici ed ecosistemici delle colture di copertura (cover crop). *Notiziario ERSA 2/2021*: 17 – 22.

## REFERENCES

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