POSTDOCTORAL FELLOWSHIP RELATED TO BIOTA SYNTHESIS (NUCLEUS OF ANALYSIS AND SYNTHESIS OF NATURE-BASED SOLUTIONS)

FELLOWSHIP #1 - ESTIMATION AND PREDICTION OF POLLINATION AND ASSOCIATED ECOSYSTEM SERVICES IN AGRICULTURAL LANDSCAPES

1. Job Description:

Fields of knowledge: Landscape Ecology, Ecosystem Services, Ecological Modeling
FAPESP process: 2020/06694-8
Project title: BIOTA SYNTHESIS – Nucleus of Analysis and Synthesis of Nature-Based Solutions
Principal investigator: Jean Paul Metzger
Postdoctoral project title: Estimation and prediction of pollination and associated ecosystem services in agricultural landscapes
Supervisor for this position: Danilo Boscolo
Unit/Institution: Department of Biology, Faculty of Philosophy, Sciences and Letters of Ribeirão Preto, University of São Paulo (FFCLRP/USP)
Working area: Landscape and ecosystem services modeling applied to land planning policies
Number of scholarships: 1
Duration: The position is offered for 24 months, starting on May/2022.
Grant: BRL 7,373.10 (monthly) plus a research contingency fund equivalent to 10% of value of the scholarship (to purchase items directly related to research activity)
Deadline for submissions: March 14th, 2022, at 10 am, Brasilia Time (BRT), UTC -3
Publishing date: April, 2022
Selection process: The selection process will happen in two phases: *curriculum vitae* evaluation and interview. Only the 3-5 candidates presenting the best evaluated CVs will be interviewed.
Local: IEA-USP: Institute of Advanced Studies of the University of São Paulo, Rua Praça do Relógio, 109, ground floor, Cidade Universitária, Zip Code 05508-050, São Paulo, SP.
Link for submission: https://forms.gle/yVECcrK4eyq3Y5h16
E-mail for contact: biotasintese@usp.br

2. General Postdoctoral fellowships 'profile:

The Biota-Synthesis initiative seeks eight highly qualified postdoctoral fellows to be part of a "Nucleus of Analysis and Synthesis of Nature-based Solutions". This Nucleus will be funded by the São Paulo Research Foundation, FAPESP, for a 5-year period (2022-2026) and brings together researchers from 5 Universities, 7 Research Institutes of the State of São Paulo and 4 Non-Governmental Organizations, as well as technicians and decision makers from the State Secretariats of Infrastructure and Environment, Public Health, and Agriculture. The Nucleus will be based at the Institute for Advanced Studies of the University of São Paulo, city of São Paulo (SP), Brazil.

The goal of the Nucleus is to support the state of São Paulo in the development of socio-environmental public policies related to agricultural sustainability, ecological restoration, zoonosis control, and disease prevention in urban areas, considering essentially nature-based solutions.

The Nucleus will work following a "synthesis science" approach, with heterogeneous and collaborative working groups, which will meet periodically in an immersive way for brainstorming discussions. These meetings will be intercalated with the analysis and modeling of existing databases, where the active participation of postdoctoral fellows is expected. See here for further details.

The desired profile for these postgraduates is of professionals with great ability to work collaboratively in teams, with high capacity for listening and dialogue with researchers and social actors with different backgrounds and professional experiences, in addition to the modeling and analysis capabilities that will be detailed for each profile. The post-doctoral position is open to Brazilian and foreign researchers who have a PhD degree, however fluency in Portuguese is desired to facilitate the discussion and dialogue with the different actors involved in the project. Each postdoctoral fellow will have a specific research project and supervisor, but it is expected that this group of fellows will work together, in close collaboration with the coordination team of the Biota-Synthesis Nucleus.

FAPESP postdoctoral fellowships are competitive (R$ 7,373.10, approximately US$ 1,340.00) and granted for 24 months, with the possibility of extension for two additional years. The fellowship includes a research contingency fund, equivalent to 10% of its annual value which should be spent on items directly related to the research activity.

3. Application procedure:

Applications must be submitted until March 14, 2022, 10 am, Brasilia Time (BRT), UTC -3, through the following link: https://forms.gle/yVECcrK4eyq3Y5h16. If you have any further questions, please contact us at biotasintese@usp.br. A same applicant can apply for more than one scholarship at the same time.

- Curriculum Vitae following FAPESP format, including Lattes (for Brazilian candidates), ORCID and Publon links, as well as citation indicators (e.g. number of publications and citations, H index); please indicate experience in teamwork and with the development of public policy, if applicable;
- Research statement specifying why the candidate is suitable for the fellowship position;
- Three reference persons who can be consulted if the candidate is selected for an interview.

If you don't receive any subscription confirmation by March 20th, please contact us again.

For each of the 8 fellowships, 3-5 candidates will be selected for an interview (to be done virtually). The initial selection will consider the adequacy of the candidate to the fellowship profile, as well as the candidate's professional experience and publication records.

The interviews are expected to take place at the end of March/beginning of April, and the fellowship will begin in May, after validation of the selective process by FAPESP, according to the Institution's norms. All postdoctoral fellows will be formally linked to the postdoctoral program of the University of São Paulo.

4. Summary of Fellowship #1 project (Estimation and prediction of pollination and associated ecosystem services in agricultural landscapes):

For two decades the importance and urgency of producing knowledge for the conservation of declining pollinators has been emphasized by several initiatives around the world. The recent IPBES assessment (2016) indicated that understanding the relationships between landscape heterogeneity and dynamics with pollinator diversity and pollination service is crucial to establish guidelines to promote a more sustainable and efficient agricultural development. Together with pollination, biotic pest control is another ecosystem service (ES) with undisputable relevance for crops, while also being very sensitive to landscape changes. Because of the synergistic of these two ES, land development plans and policies aiming to increase their delivery to crops should ideally be approached using a framework of Integrated Pest and Pollinator Management (IPPM).

Models that can estimate the availability of insects (and other species) and their potential to provide pollination and pest control services for economically relevant crops according to the structure of the surrounding landscape will have a positive impact on how agricultural landscapes should be managed in the future, including land use planning for crops that will better benefit from available ecosystem services in the long term.

The main goal of this Post-doctoral project is to produce robust spatially explicit IPPM and services distribution models based on high-resolution landscape mapping and its relation to native key species occurrence. These models shall facilitate the process of planning more efficient multifunctional landscapes for decision makers at different levels (government, agricultural land owners associations, and managers and stakeholders) as a tool to support land-management Nature-Based Solutions (NBS) and policies.

From a methodological perspective, we shall use open access data sets of service providers (Pollination and Pest control) species distribution, land cover maps, and crops location and productivity to apply a set of cutting-edge spatially explicit modeling techniques to model IPPM and services in a way that has never been done in Latin America. The results will provide inputs for the development of policies for better land-use planning, management and development with special focus on pollination services for economically important crops.

5. Requirements for the position:

- PhD in areas related to ecology, landscape ecology, community ecology, ecosystem services, environmental analysis, spatial modeling, or biodiversity conservation, obtained no longer than 7 years before the grant acceptance date;
- Knowledge to deal with open access big data species occurrence data sets (such as GBIF, Species Link, among others), curate and organize it.
- Excellent skills and experience with data management and quantitative data analysis, statistics and modeling;
- Experience with spatial data analysis and GIS (remote sensing experience is not mandatory, but welcome), with experience in landscape pattern and landscape change analyses;
- Experience with Species Distribution Modeling (SDM)
- Experience with programming language and softwares (R or Python, or other)
- Ability to work collaboratively in group, including non-academic stakeholders;
- Excellent oral and written communication skills;
- Good knowledge of English and Portuguese (to communicate with non-academic stakeholders).