Funded by the European Union

NATURE 4 NATURE

Doctoral Candidate (DC9): Setting the stage for bioinspired innovation in industry

Host: Impactvista, Belgium
Secondments: Product Development Research Group, University of Antwerp, Belgium (UA-PD; 7 months)
Technische Hochschule Deggendorf, Germany (THD; 3 months)

About Nature4Nature

Bioinspiration (including biomimetics and biomimicry) develops novel materials, devices, and applications inspired by biological structures and strategies. However, the main obstacle preventing this field from achieving its goals derives from differences in tools, practices and viewpoints of its practitioners. The EU-funded Nature4Nature project brings biologists, engineers, designers and manufacturers together to deliver early-stage researchers (ESRs) teaching in a learning environment that connects the inspiration, integration and implementation aspects of the bioinspiration process to undertake the conceptual, methodological and practical challenges. To do so, the project will collectively focus on biological filtration mechanisms to explore, test and design high-throughput, clog-resisting filtration systems, which could ultimately alleviate the current problems facing aquatic environments.

ImpactVista

IMPACTVISTA asbl/vzw is a leading, Belgium-based consultancy in eco-innovation for corporations globally and offers growth-services for ecopreneurs. Since 2009 we have been working with investors, universities, NGO's, start-ups, corporations, and governments on projects that help humanity in making the transition to a more sustainable society. We strongly believe in 'SDG 17 – Partnerships for the Goals'. Hence, a key component of our work is to establish impactful partnerships between people and organizations from different backgrounds, different sizes and different cultures, with the sole purpose to accelerate the transition to a sustainable society for ourselves and generations to come.

Project description

It is without doubt that biomimicry and bioinspiration are at the leading edge of innovation in the industrial sector. Well-known biomimetic applications such as adhesives based on gecko's feet, next-generation solar cells based on butterfly wings or novel self-cleaning materials based on shark's skin have inspired countless new lines of scientific inquiry. However, it remains challenging for bio-innovators to have meaningful conversions with industry and within the hierarchical layers of large organisations.

As a doctoral candidate in the Nature4Nature network, your responsibility will be to analyse how bio-inspired technology is currently being adapted/adopted by industry, and to identify the needs within the various layers of large organisations (investors, management, engineering and innovation, sales and marketing, and departments responsible for sustainability) when it comes to their understanding of bio-inspired innovation. Building on these insights, the task is then to translate bioinspiration and knowledge about sustainability to these different levels of industry. Finally, a training toolkit for biologists and bio-innovators, in effect creating a roadmap for bio-innovators. Most important research questions:

Research Cycle 1: Current Landscape Analysis. RQ1. How is academic bio-inspired innovation finding its way to industry? Who are the key stakeholders for bio-inspired innovation in industry? What is the role of patenting? What are the benefits, threats, challenges, and opportunities of (bio-inspired) patents for academic institutions and industry? What is the role of academic publications? What is the role of Tech Transfer Offices?

Research Cycle 2: Hurdles and Challenges that limit the adoption of academic, bio-inspired innovation by industry. RQ2. What is required to introduce bio-inspired innovation more effectively to industry? What is the perspective of the different stakeholders? What are the criteria for each stakeholder to adopt bio-inspired innovation? How does each of the stakeholders communicate about adoption of innovation? How does this differ for bio-inspired (How do they differ in their communication?)

Research Cycle 3: Translating research into actionable information. RQ3. How to effectively communicate bio-inspired scientific knowledge to industry?

Research Cycle 4: Training and education. How to train doctoral candidates to translate bio-inspired academic insights for industry?

As well as working with ImpactVista, you will also be working towards a doctorate degree, which will be awarded by the University of Antwerp (131st in World University Rankings from Times Higher Education).

Profile & requirements

- Applicants must be working towards/ hold a master's degree or equivalent in the field of psychology, anthropology, sociology, communication sciences or linguistics
- Interest in complex multi-stakeholder interaction and innovation
- An interest in biomimicry, bioinspiration and sustainability are indispensable
- Transcripts of the master's degree must be available by the date of the recruitment
- Applicants may be of any nationality but must comply with the Horizon Europe MSCA eligibility criteria*
- Applicants must be able to understand and express themselves in both written and spoken English to a level that is sufficient for the completion of a PhD
- All qualified applicants, including minorities and woman, are encouraged to apply

* *HORIZON MSCA Mobility Rule*: Applicants must not have resided or carried out their main activity (work, studies, etc.) in the country of the host organization (Belgium) for more than 12 months in the past 3 years immediately before the recruitment date. Compulsory national service, short stays such as holidays, and time spent as part of a procedure for obtaining refugee status are not taken into account.

* *HORIZON MSCA eligibility criteria*: Applicants may not hold a doctoral degree or equivalent at the start date of the recruitment. Researchers who have successfully defended their doctoral thesis but who have not yet formally been awarded the doctoral degree will not be considered eligible.

Benefits

- The selected candidate will be employed by the host organisation for **36 months**
- **The start date will be as of September 1st, 2023**
- Upon completion, you will receive a Doctorate from the University of Antwerp.
- The opportunity to be part of an MSCA Doctoral Network: the selected candidate will benefit from the designed training programme offered by the host organisation and the Nature4Nature consortium.
- Benefit from the comprehensive doctoral programme at the Faculty of Design Sciences at the University of Antwerp.
- The selected candidate will participate in international secondments to other organisations within the Nature4Nature network.
- Doctoral candidates are offered a competitive remuneration based on the MSCA allowances in line with the MSCA WP 2021-2022. Moreover, funding is available for technical and personal skills training and participation in international research events.
- Costs associated with the network and training events are to be covered by the host institution.

Application

- Interested candidates are invited to apply for this position by sending their letter of motivation and CV to impact@impactvista.com and Genevieve.Diedericks@uantwerpen.be
- The closing date for applications is **January 31st, 2023**.
- The selection committee will review all the applications upon the application deadline.
- The recruitment process of Nature4Nature is in line with the principles set out in the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers.
- Ukrainian researchers are eligible to benefit from the Science4Refugees initiative without the need of holding the refugee status.

Additional information

- For more information on the Nature4Nature consortium, please visit our website at https://www.nature4nature.net/
- Any additional questions can be directed to the project manager, Genevieve Diedericks, at Genevieve.Diedericks@uantwerpen.be

ImpactVista

Universiteit Antwerpen

science4refugees