

Artificial Intelligence in Ecotoxicology and Toxicology Research: From Data-Driven Insights to Responsible Environmental Stewardship

Context and Motivation

Artificial Intelligence (AI) is reshaping the way chemical risks are assessed and environmental health is protected. Machine learning, data mining, and automated analytical systems offer unprecedented opportunities to detect patterns, predict hazards, and accelerate decision-making. However, these technological advances rely on digital infrastructures that carry material and ecological consequences-including significant energy consumption, greenhouse gas emissions, and resource extraction for hardware.

This call seeks to address this duality: AI can simultaneously advance environmental protection and contribute to new pressures on ecosystems. To ensure AI supports a sustainable transition, research must explore both its scientific capabilities and its planetary footprint. It is envisaged that employing the above tools may advance to assess, characterize and provide ecotoxicological response on organisms, communities and ecosystems as well as human health.

The full definition of AI is found at the end of the call.

Objective of the RT2E 2026 Call for Proposals

The Research Program in Environmental Toxicology and Ecotoxicology (RT2E), through the evertéa Foundation, invites innovative projects that:

- use AI to improve toxicology, ecotoxicology and environmental science/health research, and;
- evaluate, quantify, or mitigate the environmental impacts of AI infrastructures.

Projects should contribute to scientific and regulatory knowledge at the French, European and international levels, while supporting "One Health", digital responsibility, and transparency.

Funding Details

€30,000* per project and at least two projects funded

(*including €5,000 per project kept at evertéa Foundation for workshop, outreach activities and communication linked to the funded project)

Duration: up to 24 months

Funding available from 2027

Priority Research Areas

Proposals of particular interest include:

- AI-driven data mining to improve chemical and ecological risk evaluation;
- Integration of heterogeneous datasets (omics, monitoring, literature, industrial data);
- Predictive tools to characterize the impacts of contaminants on organisms and ecosystems, and/or to produce Adverse Outcome Pathways (AOPs);
- Development of low-energy/resource-efficient digital workflows for environmental science; and
- Ethical and societal dimensions of digital eco- and/or toxicology: transparency, trust, governance.

Projects combining these approaches are highly encouraged.

The project should evaluate the environmental footprint of data infrastructures supporting AI.

The project should continue developing or create an AI application. Projects with standard applications of well-established AI models are not the focus of this funding.

Eligible Disciplines

This call welcomes interdisciplinary research across:

- Toxicology and ecotoxicology;
- Environmental sciences and ecology;
- Environmental health;
- Environmental economics, ethics, and social sciences; and
- Data science, computer science, and AI (in collaboration with the above-mentioned experts).

Collaborations across multiple sectors (public, private, NGOs) are encouraged.

Characteristics of the Proposals

Projects must:

- Be innovative, exploratory, or serve as a pilot for future expansion;
- Demonstrate a potential leveraging effect for future funding or application;
- Promote open data principles when possible (FAIR);
- Clearly explain how AI is used/responsibly evaluated; and
- **New:** Calculate the estimated Carbon Footprint of the proposed project using one of these calculators:
 - <https://mlco2.github.io/impact/#compute>;
 - <https://www.carbonfootprint.com/>;
 - <https://ecologits.ai/latest/>
 - etc ...

Single-team or multi-team projects are accepted.

Timeline and Proposal Review

Opening of the call: **February 2026**

Deadline for proposal submission: **June 30, 2026**

External expert peer review: **Aug.-Oct. 2026**

Scientific Council evaluation: **Dec. 2026**

Publication of results: **Dec. 2026**

Funding agreements finalized in early 2027

The evaluation will focus on:

- Scientific quality and originality;
- Feasibility and methodological rigor;
- Scientific complementarity and expertise of the consortium;
- Adequacy of budget and leveraging potential; and
- Responsible integration of AI and sustainability considerations.

Ethics - Animal Experimentation or Human Ethics

Projects involving animal use must:

Comply with European Directive 2010/63/EU and national regulations

Provide authorization numbers if already approved

Funding Rules

- ⇒ **New:** Max €30,000 per project, Minimum of **2 projects**
(*including €5,000 per project kept at evertéa for outreach activities linked to the project)

Eligible expenses:

- Staff costs (fixed-term contracts, intern stipends, social charges);
- Laboratory operating expenses, consumables, equipment access, also including data purchase or AI platform monthly fees;
- Travel and conference fees linked to project activities;
- Publication fees;
- Subcontracting (<30% of total, exceptions justified);
- Structure costs must remain below 4% of the total budget.

If co-funded, applicants must:

- Specify nature and amount of co-financing
- Explain feasibility if co-funding is not granted

Commitment of the Project Leader

Funds managed by a French public research institution

PI must not be a member of the evertéa Foundation governance
PI will participate in communication and outreach activities

Proposals and reports must be written in English.

Definition of Artificial Intelligence (AI) in the Context of the Call:

For this call, AI refers to a set of computational approaches designed to perform tasks that typically require human intelligence, such as learning from data, recognizing patterns, making predictions, and supporting decision-making. AI systems can autonomously or semi-autonomously analyze large and complex datasets, identify emerging trends, and propose actionable insights.

AI in toxicology and ecotoxicology may include, but is not limited to:

- Machine learning models trained to predict toxicity levels, species sensitivity, or dose–response outcomes (e.g., predicting endocrine-disruption potential from chemical structure);
- Deep learning architectures for image and signal interpretation (e.g., automated detection of behavioral changes in fish, omics pattern recognition);
- Natural language processing tools to extract and synthesize data from literature, regulatory reports, or monitoring records;
- Data gap identification in deciphering causal relationships, e.g. a mechanism of action of a contaminant, an adverse outcome pathway ...
- Knowledge graphs and AI-enhanced databases to link molecular, ecological, and exposure information; and
- Digital twins and predictive simulations of environmental contamination pathways and biological responses.

NOTE: AI also encompasses approaches aimed at assessing and mitigating the environmental footprint of digital technologies, such as optimizing computational processes, enhancing data storage efficiency, and developing low-energy algorithms. However, within the framework of this call for proposals, the project must remain strictly focused on ecotoxicological, toxicological, environmental science or environmental health research.