Lab handbook – EcoPhys group

(last updated 27/02/2026)

1. Who we are

We are a research group based at CREAF and at the Ecology Unit (Department of Animal Biology, Plant Biology and Ecology, BABVE) of the Universitat Autònoma de Barcelona (UAB). This handbook encapsulates the philosophy and functioning of our group in a clear and concise way for current and prospective group-members.

Our group ('Functional Ecophysiology and Biogeography of Terrestrial Ecosystems', EcoPhys) is devoted to the study of the functioning and dynamics of terrestrial ecosystems, and how they are being impacted by global change. We combine many different approaches (observational, experimental, modelling) and scales (from individual organisms to global) in different biomes (Mediterranean, boreal, temperate, tropical). We aim at improving our understanding about how ecosystems work and how they respond to global environmental change, with the ultimate goal of contributing to human wellbeing in a healthy Biosphere.

Our group belongs to two different institutions: CREAF and UAB. Almost all our research projects and contracts are conducted through CREAF, which is a public research consortium between different entities (administrations, universities, and research centers), including UAB. UAB is a public university devoted to higher education and research. Several members of our group are UAB professors with an agreement to conduct their research at CREAF.

Our group consists of a few permanent and senior researchers (henceforth PIs); pre- and post-doctoral researchers, technical staff, students (MSc. and BSc. as well as from vocational training schools) and visiting students and scholars, all supervised or hosted by one or more of these PIs. We share common research interests and topics, but also laboratory spaces, equipment and other resources. We host weekly lab meetings organized by one or more of our members, where we share scientific ideas and work-in-progress, have invited seminars, and discuss issues related to academic life and the use of shared resources.

We advocate for an inclusive and collaborative research culture, and we greatly value our respectful working environment. We want to be a group where every member feels comfortable sharing their opinions and views, as we embrace diversity in all its dimensions.

2. Internal communication

Language

Catalan is the official language used at CREAF and UAB. Most private conversations among group members are in Catalan, often combined and merged with Spanish. Still, we use English on a regular basis within the group in all our lab meetings and written communication. Any student, researcher or technician will be able to develop their work at CREAF in English, but at the same time we encourage everyone to learn Catalan to participate to the community and culture. The Catalan government offers free courses to learn the language (https://www.cpnl.cat/).

Channels

All active EcoPhys members are invited to join a working group in the Microsoft application Teams, preferably with their CREAF email address, if they have it. All email addresses registered in this group will be able to send and receive messages to all the other members using the mailing list simply by emailing: Ecophys@creaf.uab.cat.

All members of the EcoPhys Teams group can view, download and edit any document on the "General" channel. Additional private channels can be created and accessed for specific purposes. The chat of the General channel is reserved for our lab meetings and should not be used for other purposes.

Weekly meetings

We host weekly lab meetings on Fridays at 12h at CREAF (1h long approx.) Participation in person is encouraged, but online attendance is also available on this link. People attending in person typically have lunch together after the meeting.

In every lab meeting, we usually devote the first or last ten minutes to housekeeping issues. Most lab meetings consist on a scientific presentation delivered by a team member, a visitor or a colleague. We also host journal clubs and guided discussions on any topic related to working in academia. These meetings are open and external colleagues are welcome to attend if they are interested in a specific topic. We try to cover a diversity of topics and meeting types, and all members are encouraged to propose topics.

Informal interaction opportunities

We usually organize one group weekend out every year, typically in autumn (or spring), where we stay at a hostel (or similar) and do outdoor activities together. These meetings do not involve any work-related activity and are a great opportunity to get to know each other in a different and more relaxed setting, and to get to know different places in Catalonia. All group members are encouraged to attend.

We also tend to organize group dinners, particularly connected to visits by foreign researchers, celebrations of project achievements, or farewell parties. Again, all group members regardless of their career stage are encouraged to attend, as these meetings can be fun and great opportunities to interact among us and with visitors in a non-academic setting.

Healthy communication practices

We aim to use communication technologies in a way that keeps us connected but not stressed. Tools like email, Teams (or SMS, mobile calls or WhatsApp, when used for work purposes) help us coordinate and stay in touch, both within the group and with external collaborators. However, there is no formal WhatsApp group for the lab, and its use remains a personal choice. At the same time, we try to be mindful of the volume of messages we send and receive — especially considering the number of channels we're all part of (CREAF, UAB, research projects, etc.)

The messages broadcasted to the team should use concise and clear language, and the channel chosen should reflect the type of communication (e.g., do not use WhatsApp, mobile calls or SMS for something that is not urgent). All team members are encouraged to avoid unnecessary communications outside working hours. These small habits help us maintain focus during working hours and protect our right to disconnect and rest after hours. We value open and friendly communication, while also being conscious of others' time and mental space.

3. Roles & Expectations

Principal investigators (PIs)

Most senior PIs are involved in or coordinate multiple projects and engage in diverse responsibilities (committees, group logistics, leadership in large-scale initiatives, teaching). All this implies that PIs often switch their work context from hour to hour and regularly spend entire workdays in meetings on disparate topics.

The PIs in our group are responsible for supervising undergrad and pre-doctoral researchers, technical staff employed with funds from their competitive projects, post-doctoral researchers with a designated supervisor, as well as their visiting students. This entails, among others: providing academic guidance on career development, designing and executing scientific studies, warranting the funds to cover the expenses associated to the execution of the planned scientific activities, facilitating collaboration with colleagues from other institutions and within CREAF, discussing scientific results, and facilitating the dissemination of such results through scientific papers, conference contributions, reports or other means.

In addition, PIs are expected to liaise with institutional staff to solve and facilitate issues related with health and safety at work, use of facilities and access to institutional resources. Within the group, PIs are expected to introduce new staff to the rest of the team members and to encourage them to participate in the weekly lab meetings.

PIs who are UAB Professors can also facilitate the interaction with the Ecology Unit at UAB regarding teaching opportunities, attracting undergraduate students through internships, and identifying prospective students for MSc, PhD or technician positions within the group. In case of undergrad students developing their *practicum* with one of the group's PIs, that PI will coordinate with the other group researchers to let the student participate in different projects, facilitating their training on a diversity of topics/tools.

Undergraduate and MSc. Students

Undergraduate and MSc students join the team to complete and complement their research degree, and their main objectives are to acquire knowledge and experience while completing their academic degree. Students may come from UAB or any other institution, including international universities.

Students within the team are supervised by one or more of the PI's and/or postdoctoral researchers, who provide academic guidance throughout their time in the lab. Students frequently also count on a mentor (e.g., pre-doctoral researcher or research technician) that helps them and guides them in their day-to-day activities.

Their tasks may include laboratory work, fieldwork, and/or computer-based activities, depending on the project. Students that carry out their final degree project within the team, such as their master's thesis, are expected to take responsibility for their work in terms of planning and executing research activities and writing of the thesis, with appropriate support from their supervisor(s).

All students are encouraged to attend the weekly EcoPhys group meetings and to actively participate in any of the research activities organized within the team to develop practical skills and scientific understanding and enhance their learning experience.

Post-doctoral Researchers

Postdoctoral fellows (post-docs) are characterized by a transition to increasing independence, spending most of their time on their own research projects whilst also collaborating on a broader range of topics with other researchers, both within and outside our group. This may also entail taking on further responsibilities, such as supervising students, sitting on committees, serving as journal reviewers, teaching, and facilitating the dissemination of expertise within the group.

At present, typical funding sources for Post-docs in our lab include programs such as Juan de la Cierva, Beatriu de Pinos, "la Caixa" Junior Leader fellowships, Marie Sklodowska-Curie Actions, and SNSF postdoctoral mobility grants, besides post-docs associated to specific national or international projects coordinated by the PIs of the group.

Post-docs are strongly encouraged to apply for competitive funding, including the fellowships listed above and other grant schemes, such as the ERC program (EU) or the Spanish main scheme for research projects, when appropriate. To support this, CREAF offers updated information on grant calls (CREAFunds portal and newsletter), excellent training opportunities (e.g., MSCA-PF writing courses, training for interviews, CV assessment), as well as guidance and mentoring.

Post-docs can actively encourage a dialogue with the PIs of the group and beyond to receive constructive feedback and understand opportunities for future growth and career development. See here an updated version of the research career path in Spain.

Technical staff

The technical staff generates or processes data for the projects they are assigned by their PI, mainly by collecting samples and performing field, lab and computer work. They are devoted to creating good quality data and maintaining the equipment and spaces they use in good condition.

There is a wide range of jobs and responsibilities that a technician can take on including assisting other technicians and researchers, managing small teams,

organizing field campaigns, participating in the development of new protocols, assisting in data analysis, or preparing project reports.

Technicians can expect to see the level of responsibility within the projects they work reflected appropriately in their contract, as described in CREAF's professional categories.

Purely technical work is usually recognized in the acknowledgements section of papers. Different types of recognition (e.g., coauthorship) may be appropriate depending on the specific circumstances (see authorship section) and should be discussed with their PI at the beginning of their contract.

Pre-doctoral researchers

Pre-doctoral researchers are generally enrolled in the PhD program in Terrestrial Ecology at UAB, although alternative options may be considered depending on individual circumstances.

Pre-doctoral researchers should be funded by some form of scholarship. The most common options are those offered by the Spanish Government (FPU and FPI) and Catalan Governments (FI), or private funding sources such as 'La Caixa'.

PhD candidates employed full-time are expected to complete their PhD within the maximum period established by the PhD program (4 years), which also corresponds to the period funded by most PhD scholarships. In justified cases, it may be possible to obtain an extension of up to 1 year, as maximum PhD duration is limited to 5 years in our PhD program.

Each pre-doctoral researchers is supervised by one, two or three senior researchers (PIs and postdoctoral researchers, from within and outside the team). PhD supervisors provide academic guidance throughout the development of the PhD, including discussing future career development as the PhD period comes to an end. Regular one-to-one meetings with supervisors (weekly to monthly depending on the situation) should provide ongoing feedback and support in a constructive environment. Unless otherwise agreed, pre-doctoral researchers are responsible for scheduling the meetings and setting the agenda.

Most of their work time is devoted to their own PhD research, which may include fieldwork, laboratory work, and/or office-based tasks. Pre-doctoral researchers should be proactive and have a leading role in designing their PhD experiments or sampling schemes, conducting the measurements, analyzing the data, and interpreting and reporting the results. They should also expect active support from their supervisor(s) at all these steps, in the form of intellectual inputs and guidance but also in terms of practical support (e.g., access to field or lab assistants).

Although pre-doctoral researchers should focus on their PhD research program, collaborations with other researchers (inside or outside the lab) can arise, resulting in potential co-authorships. Those opportunities should be specifically discussed with their PhD supervisors.

Pre-doctoral researchers are expected to attend EcoPhys lab meetings, participate in training courses (such as the Watering Talents program at CREAF), present their work in national or international conferences, and, if possible, conduct at least one research stay at another national or international research institution. All the corresponding expenses should be covered by their own fellowships or from research funds raised by their supervisors. The specific courses, meetings and research stays should be agreed with their supervisors to ensure appropriateness and feasibility, but pre-doctoral researchers are encouraged to propose them. They may also take on teaching assistant responsibilities, for which fluency in Catalan or Spanish is highly recommended.

Pre-doctoral researchers are generally expected to be first authors and corresponding authors of the publications resulting from their PhD thesis. Authorship roles should be discussed with their PhD supervisors.

Visiting students and researchers

The group is open to actively supporting undergrad, MSc, Pre-doctoral researchers, postdoctoral fellows and visiting scholars on sabbatical from outside institutions.

Visitors will need to establish contact with a researcher in the group, allowing for sufficient time for the visit to be properly organized. The time required to organize the visits depends on the type of visit and country of origin of the visitor, but may range from one month (for short visits by EU citizens) to one year (e.g., for sabbaticals). This requires obtaining the resident permit, relevant medical insurance, permission from the hosting organization (CREAF), space allocation, and access to office and laboratory space and facilities.

All visitors are encouraged to participate in other ongoing projects within the group as opportunities arise. Weekly group meetings are the key platform for research communication and intellectual exchange, while also helping new members integrate smoothly into the team. Visiting scholars are encouraged to give a first seminar to the group soon after their arrival to introduce themselves and their work and a second seminar at the end of their stay to update the group on the activities that have been carried out.

CREAF has a *program for visiting researchers*, where practical information and opportunities can be found. In addition, hosting researchers can provide support

with accommodation, schooling, mobility, access to infrastructures, and opportunities for collaborations.

Visiting students are encouraged to discuss and develop a research plan with supervisors in the team. The primary goal is to make progress on the tasks outlined in the research plan, thereby improving their research skills, broadening academic perspectives, and enhancing overall scientific capacity. During their stay, visiting students will have the opportunity to learn advanced research concepts and methodologies, and to engage in high-level research activities.

Visiting students that join our group with an open training plan are encouraged to participate to scientific activities beyond those led by their host scientists to enrich their research stay. This interchange of visiting students is mainly facilitated by the PIs within the group.

For applications, visiting students interested in joining our group are encouraged to prepare a detailed CV highlighting their academic and research background, along with a brief statement outlining their research interests and any preliminary ideas. These documents should be sent via email to a prospective host in our group, along with a clear indication of the intended mode of collaboration, timing of the visit, and the proposed source of funding.

4. Research group culture

We aim to provide a healthy working environment where people can develop their professional careers by adopting a reasonable work-life balance. We are committed to creating a safe and inclusive environment that celebrates and promotes diversity in our group and in science at large. We take research ethics and integrity very seriously, support open and reproducible science and adhere to initiatives supporting post-bibliometric research assessment, such as DORA and CoARA.

Equity, Diversity, and Inclusion (EDI)

We aim to foster an inclusive and welcoming environment for all lab members and visitors. We also aim to highlight the diversity in our lab group and in the research community. In particular, we aim to broadcast those voices traditionally underrepresented in scientific discourse. We strive to use inclusive language and highlight diverse narratives in our laboratory meetings and in all interactions within and outside of our lab group. We do not tolerate discrimination and seek to '*prevent, detect and remedy any discrimination on the grounds of gender, age, religion, origin, disability or sexual orientation'* in accordance with the principles

stated in the Justice, Equity, Diversity and Inclusion principles outlined in CREAF's 2023-2027 JEDI plan and outlined by UAB principles.

Research integrity

We aim to conduct high quality research with the highest degree of integrity and ethical consideration, following the principles outlined in the European code of conduct for research integrity.

Our core principles, taken directly from the code of conduct linked above, are:

• ***Reliability*** *in ensuring the quality of research, reflected in the design, methodology, analysis, and use of resources.*

• ***Honesty*** *in developing, undertaking, reviewing, reporting, and communicating research in a transparent, fair, full, and unbiased way.*

• ***Respect*** *for colleagues, research participants, research subjects, society, ecosystems, cultural heritage, and the environment.*

• ***Accountability*** *for the research from idea to publication, for its management and organization, for training, supervision, and mentoring, and for its wider societal impacts.*

We have zero tolerance for conduct in breach of these principles, particularly serious breaches of this code such as plagiarism.

We are also committed to minimizing the negative environmental impact of our research activities, for example by expanding the lifespan of products and equipment used, by avoiding the use of single-use products, and by supporting and buying from environmentally responsible companies. When travelling for work, we are mindful of our environmental impact. We encourage remote or hybrid alternatives to travelling whenever possible. When travelling, we encourage the use of public transport and/or car-pooling over flights. All these considerations also apply to the conferences and meetings we organize. Resources: https://lowcarboninitiative.nl/resources/

When working abroad and collaborating internationally we adhere to the International Labours Organisation (ILO) Fundamental and Rights at Work, International Labour Standards and respect the national labour regulations. When we work outside the global north, either through collaborative projects or performing field work, we advocate for truly equitable partnerships following https://www.nature.com/articles/s41559-021-01496-y

Workplace conduct

We are committed to providing a healthy, respectful, and productive environment to carry out our research, regardless of our career stage.

CREAF does not offer specific offices assigned to specific groups, but researchers are usually grouped in offices based on their scientific stage (i.e., pre-doctoral researchers from different groups usually share offices). Similarly, laboratories are shared by colleagues from different groups working on similar topics. This requires coordination with colleagues from different groups, and agreement with the use of spaces, consumables and instrumentation. Working in shared spaces (offices and laboratories) means recognizing that our habits, noise levels, and use of common resources affect others. We should all strive to maintain a professional atmosphere where everyone feels safe, focused, and respected.

Key principles of workplace conduct in our group include:

Respect for shared space: Keep common areas clean, organized, and functional. Leave equipment, desks, and shared tools as you would like to find them.

Consideration for others: Be mindful of noise, personal conversations, and the use of shared devices or instruments. Use headphones when needed and take calls or meetings in appropriate spaces.

Inclusivity and professionalism: Treat all members of the group with fairness and respect, regardless of role, background, or experience (as described in the *Equity, Diversity, and Inclusion* section).

Any researcher choosing to utilize artificial intelligence (AI) in their work must do so in a transparent and responsible manner, following the EU Guidelines on the responsible use of generative AI in research.

Work & wellbeing

A healthy work-life balance helps us manage the stresses of academic research. In science, working hours can be a bit anarchic, particularly when involving field campaigns, conferences, or approaching deadlines (e.g., finishing the PhD, proposals, etc.). However, no one is expected (or encouraged) to work more than 7.5h per day on average, in accordance with CREAF labour agreement. Taking annual leave (typically in August, but this can be flexible) and paid leave (Easter and Christmas) is a labour right, and everyone is strongly encouraged to use their leave regardless of their career stage.

Working from home can be a useful means to achieve a healthy work-life balance. We tend to be very flexible with working hours (within the limits stated in the previous point) and with remote work, although as a rule we expect people to be at CREAF at least two or three days per week on average. Exceptions to that rule are certainly possible but this needs to be discussed with your supervisors.

We acknowledge that everybody can experience periods of poor mental health, and thus we encourage openness and seeking support when needed (from your colleagues, supervisors and/or from CREAF and UAB services for mental wellbeing). Also, when needed, do not hesitate to go on sick leave following medical advice.

5. Developing as researcher

Open & accessible science

We are strongly committed to promoting Open Science principles in our research, following European, Spanish and Catalan mandates. This includes publishing in Open Access journals (see 'Publications and authorship'), for which financial support can be sought through agreements between scientific editorials and institutions such as CERCA or UAB. Alternatively, we encourage uploading author's preprints onto public repositories. We also promote FAIR management of research data and code (making them Findable, Accessible, Interoperable and Reusable) to improve science transparency and reproducibility. However, we also understand that collecting and processing data is costly, and people involved in this data collection efforts should be properly credited. In some cases (e.g. collaborative data collection subject to specific data policies), temporary embargoes may be applied.

Conferences and travel arrangements

The primary aims of attending conferences are to present your research, learn about your field, and build and strengthen your network of collaborators. Conferences tend to be fun but quite busy, and sometimes they can be stressful. When selecting a conference consider the match to your research topic, readiness of your research for presentation, opportunities to learn, timing and logistics in the context of the rest of work. Use your time wisely, prioritize the most relevant sessions/events, plan ahead (particularly for big conferences), and ask for advice. Expenses (registration, travel, accommodation) may be covered by personal fellowship or by a project. We encourage all students and post-docs to apply for available competitive travel grants. This requires a formal application to be submitted in advance and can be listed in the CV as a relevant merit.

At the conference, ask questions and be curious - most people love to discuss their research and would expect the same from you. Discussions can lead to new insights, collaborations, jobs, and often long-term friendships.

Plan your trip in advance, consider options to share the costs with other group members and do not hesitate to express your preferences regarding accommodation and travel arrangements.

Publications and authorship

Scientific publications are the main means by which we communicate our research and, as such, are a key element of the scientific system. Writing a scientific paper is a lot of work, but it is also the best way to contribute to your field of research and get to be known by your peers. Authorship entails recognition of your work, but also responsibility and accountability.

The choice of which journal to send our manuscripts to should be agreed among coauthors, but the first author typically has a leading role in proposing and deciding the journal (although the supervisor(s) could also have this role for master or early pre-doctoral researchers). The choice depends on several considerations, e.g., the potential impact of the work in our community, the audience to which the work is directed to, as well as practical considerations (timing of PhD or post-doctoral contracts, agreements with project partners, etc.) We do not consider journal impact factors to be the most important criterion to select the target journal. However, we recognize that publishing in well-established journals is important for the career path of young researchers.

Authorship of a scientific paper should be limited to those individuals who have contributed in a meaningful and substantive way to its intellectual content. Sometimes the limits between what is or is not a substantive contribution can be blurry; in such cases a useful consideration is that all co-authors should be able to defend the content of the paper. In general, it is advisable to discuss co-authorship matters at the beginning of a project or collaboration. In the end, it is the responsibility of individuals involved to evaluate their roles as well as the roles of their co-authors fairly. In cases of conflict, the final decision should be agreed between the first author of the paper and the relevant supervisors. We recommend the following articles for more insights on this topic: CrediT author staement and Transparency in authors' contributions.

The author order is important. The first author is the person who has performed the central experiments of the project and has led the writing process, and it is ultimately responsible for ensuring the integrity of the work itself. Many journals

allow for shared first authorship whenever appropriate. Some journals also require an explicit statement of the contributions of individual co-authors to the paper. In our field, the last author is usually the researcher that has coordinated the project within which the paper has originated, provided they made also other contributions. Securing funding is not sufficient contribution for co-authorship. Author order between first and last usually reflects the magnitude of the contribution to the paper in decreasing order or simply follows alphabetical order.

Individuals who do not meet these but provided a valuable contribution to the work should be mentioned in the 'Acknowledgements' section of the paper. Institutional support and funding agencies should also be acknowledged.

Scientific publishing was started by non-profit scientific societies, but has become an extremely lucrative enterprise dominated by a few transnational publishers. The distribution of work and profit in this system is extremely unfair. We thus favor journals published by scientific societies or by non-profit organizations.

We also advocate for open access in scientific publishing (free access for the author and for the reader) and support initiatives such as Peer Community in that allow scientists to regain control of the publication system and allow a more inclusive and equitable approach to scientific publication.

Public engagement

We have a responsibility to ensure that our research is impactful beyond academic settings. We do this by increasing public awareness of our findings and sharing them with policy makers to both directly and indirectly improve decision making and environmental management. This involves establishing direct and meaningful interactions with public administration, key stakeholders and citizens at large.

Additionally, most of the research we do is supported by public funding, and we have a responsibility to engage with funding bodies to explain why this funding is important and what was accomplished with it.

Besides contributing to the common good, public engagement brings many benefits to the researchers as well. It improves our communication skills, teaches us how to distill complex ideas, motivates and contextualizes our research. This creates a valuable two-way exchange of inspiration and ideas between scientists and the public.

We also value transdisciplinarity, enhancing the crossing of boundaries between science, arts, and other ways of knowing. Several members of Ecophys are also involved in Ecotons, a CREAF collective interested in the intersections between art

and science. These shared interests and initiatives help nourish a more reflective, open, and creative research culture.

Our group has a long tradition of knowledge transfer and public engagement, including long-term research collaborations with the public administration in Catalonia. We are also fortunate to have a great communication and press office at CREAF that helps us reach wide audiences. We intend to uphold this tradition, and we are open to considering new avenues to communicate our research across disciplines, and with the general public.

Contributors

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