Dear participant,  
  
Thank you for taking the time to fill out this questionnaire!  
  
About the research  
This questionnaire is part of a research that investigates the importance of theoretical knowledge in biological research and education.  
  
The research has *two objectives*:

 1. Investigate how a close connection between theoretical biological education and biological research can be ensured.  
 2. Measure the perceived relevance and importance of theoretical knowledge by researchers and students within the field of biology.

The results of this research are used to evaluate the relevance and actuality of current theoretical biological education and curricula in Dutch universities. Are the most important theoretical frameworks and analysis methods biological research use part of university biology curricula? And if not, what is missing?  
  
Results are expected to be available at the end of June 2025. If you or your institution are interested in the results of this research, you can leave your contact details behind later in the questionnaire, or send an email to t.p.w.vervenne@uva.nl at any moment.  
  
About the questionnaire  
This questionnaire *measures*:  
- the most important theoretical principles in your research field;  
- which scientific fields are seen as essential in biological research;  
- which topics are missing in current day biology education in university.  
  
The **target group** of this questionnaire is *researchers in the field of biology of Dutch universities and scientific institutions.*  
  
It is important that you understand the procedure of this research. Therefore, please read the following text.  
  
Instruction  
In this survey you are asked to fill out 11 questions. All questions relate to your personal views on the research field of biology. There are no 'right' or 'wrong' answers, so please feel free to give your honest opinion. Filling out the survey will take approximately 10 minutes.  
  
Voluntariness  
Taking part in this research is voluntary. All information will be treated confidentially. You can stop filling out the questionnaires at any moment, without having to state the reason. Not all questions have to be answered to finish the survey.  
  
Discomfort, risks, and insurance  
No special insurance applies as there is no expected discomfort or risks for the participants of this survey.  
  
Confidentiality  
The data from this research will be used for scientific analysis. No personal information will be used in the analysis or reporting. Responses to the survey are anonymous, unless participants choose to include their contact information for follow-up.  
  
There are two questions which will ask if you are interested in leaving your contact information: either to be contacted for a follow-up interview and / or to receive the results of this study. If you leave your contact information in one of these fields, your information can be linked to your other survey answers. Sharing your contact information is in both cases completely optional. If you do choose to leave your contact details in one or both of these fields, they will not be part of the analysis or (scientific) communication of the research and will be treated confidentially. Personal information from these entry fields will be erased from the survey results 7 days after you have filled out the questionnaire, in order to make your answers fully anonymous again.  
  
Contact  
For questions or further information about this survey, you can contact T.P.W. Vervenne (t.p.w.vervenne@uva.nl) or dr. M. Bruijning (m.bruijning@uva.nl) from the University of Amsterdam. For any complaints or pressing matters related to this questionnaire, you can contact the member of the Ethics Board of the Institute of Biodiversity and Ecosystem Dynamics at the University of Amsterdam, dr. C.J. Hickey (email: c.j.hickey@uva.nl). You may download this information [here](https://uva.fra1.qualtrics.com/CP/File.php?F=F_b8YLzc4wjePdcHk).  
  
By confirming the five statements below you declare to have read and understood the above information. Additionally, you declare to agree with the procedure as described above.

* I am a researcher at a Dutch university / research institute.
* I am older than 18 years of age.
* I have read and understood the above information.
* I agree to participate in this survey an to the use of the data obtained with it.
* I keep the right to stop filling out the survey at any moment I wish to.

*Question page 1/5: general information*

Q1. With which university or research institute in the Netherlands are you affiliated?

Q2. If you would have to give yourself a label as a researcher within the field of biology, which label would you use? (Examples would be: cytologist, behavioural ecologist, biomedical enigineer, etc.)

*Question page 2/5: theoretical frameworks and research methods*

Q3. What is in your opinion the most important theoretical framework within your line of research? Think about hypotheses, theorems, etc. The framework can be on any level, how broad or specific as you see fitting: there is no correct answer. If it is impossible to pick solely one, choose a maximum of three frameworks.

Q4. State to what extent you agree with the following statements. 1 = strongly disagree, 5 = strongly agree

* Everything can be solved if you think about it long enough
* Theories are most valid when they have a practical application in the world
* Theories can be somewhat general in order to describe reality properly
* Science can explain everything in the universe

Q5. What are the research methods / sampling methods / tools you use for collecting data / conducting your research? Multiple answers possible

* Laboratory work
* Models
* Working / sampling in the field
* Logic and argumentation
* Meta-analysis
* Interviews and / or questionnaires
* Other, namely:

Q6. With which data analysis methods do you work the most? Name at least one and a maximum of three methods. Try to be as specific as possible (e.g. 'generalized lineair mixed models' instead of 'statistics').

Q7. Which disciplines are the most important in your research?  
Rate them from most important (1, top) to least important (9, bottom).

* Computer sciences
* Philosophy: Ethics
* Chemistry
* Philosophy: Metaphysics
* Mathematics
* Philosophy: Epistemology
* Physics
* Biology
* Philosophy: Logic

*Question page 3/5: important papers and literature*

Q8. What have been the most important research papers in your field of research in the past three years (published in 2022 or later)?  
- List at least 1 paper and a maximum of 3 papers.  
- If you have quick access to the DOI's, sharing these would be very much appreciated!

Optional question: what is in your opinion a canonical paper, book or other written literature, a must-read from your research field?

*Question page 4/5: educational relevance*

Q9. If you look at your research field, which topics or skills are not taught or addressed (enough) in university education? In other words, which subjects or skills could be taught or addressed more in university education?

Optional question. If you look back at what you have been taught as a student, which topics / courses / information have you never had to use in your line of work?

*Question page 5/5: follow-up*

Q10. Would you like to receive the results of the study when these are available?

* No
* Yes, I will send an email that I am interested to [t.p.w.vervenne@uva.nl](mailto:t.p.w.vervenne@uva.nl)
* Yes, you can send me the results on:

Q11. Would you be interested to be interviewed on the topics of this research?  
  
Besides this questionnaire (quantitative), interviews (qualitative) will be held to get a deeper understanding of the views on theoretical knowledge by biological researchers.  
  
The interview will specifically address:  
- the connection between biology education and the research field of biology, and (potential) missing links between the two;  
- the importance and use of other scientific disciplines within the field of biology;  
- the relationship between theory and practice in the field of biology.  
  
Interviews will take place at the end of March and in the month of April. They will be approximately 20-45 minutes and can take place either in person or online depending on your preference. Findings and information from the interviews will be reported anonymously, and will not be traceable to the interviewees in any reporting or (scientific) communication.

* No
* Yes, I will send an email that I am interested to [t.p.w.vervenne@uva.nl](mailto:t.p.w.vervenne@uva.nl)
* Yes, you can contact me on: