

## Protocol, Organism Biology steering committee meeting

October 5<sup>th</sup> 2023, 14-15

Room A-402

### Attending:

Mattias Thelander (chair)

Peter Bozhkov

Georgios Tzelepis

Carol Kälin

Marisol Sánchez García

Stefanie Rosa

Martina Leso

Florentine Ballhaus

Vahideh Rafieebanadaki (study director without right to take part in decisions)

Katarina Landberg (study director without right to take part in decisions)

### Not attending:

Charles Melnyk

Salim Bourras

### §1 Meeting was opened by Mattias Thelander

- a. Katarina was appointed secretary
- b. Marisol was appointed adjutor
- c. The protocol from last meeting was approved.
  - i. Mattias informed that Vahideh has now been officially approved as new study director by the faculty. See attachment **a)** to this protocol.
- d. Additional questions: One additional question was raised, see § 9 below.

### §2 Changes in autumn 2023 budget

Katarina informed that the course Root-soil interactions budgeted for this autumn has been postponed since the organizer was unable to give it. To make use of available funding, the study directors, in communication with Mattias, therefore decided to offer another course occasion of Visualize your Science instead, with a course budget of the same amount as the Root-soil course (90 000 SEK = 14 spots at Vis y Sci). We also talked to the chairperson of FUN-NJ (Petra Fransson) about this, since it then still means that we might go over the total budget for the year somewhat and she approved this.

### §3 Final reports from concluded activities

- a. *Annual workshop, spring 2023*: Katarina reported that this year's Annual workshop took place June 7<sup>th</sup>-8<sup>th</sup> at the Fagerudd conference center outside Enköping. The program included a session about the research school and a short presentation by each of the attending students, an afternoon Workshop with Åsa Burman called "Sustainable working methods" based on her book "Finish on time and feel good along the way", as well as a session with inspirational talks and panel discussion with Hans Ronne, Stefanie Rosa, Pernilla Erlander and Georgios Tzelepis. We also had dinner and social activities in the evening. 12 PhD students attended the workshop: 4 from Plant Biology, 2 from Aqua and 6 from Mycopat. The evaluation was very good, the general opinion scored 4,9 out of 5. Also the Workshop with Åsa Burman and the Inspirational talks session were

received well getting 4,5 and 4,6 out of 5. Feedback included that June is a good month for this workshop, and that we should try to advertize the workshop stronger. We had budgeted 120 000 SEK for this activity, and of that 97 831 SEK was spent. The final report was approved.

#### §4 Status report of ongoing and planned activities

- a. *Understanding and coding the R language, autumn 2023*: Vahideh reported that this 3 credit course is given by Matt Low at the Department of Ecology. It will be given 6-10 Nov and deadline for registration is Oct 27<sup>th</sup>.
- b. *How to write and publish a scientific paper, autumn 2023*: Vahideh reported that this 4,5 credit course is arranged by Marisol Sanchez-Garcia at Mycopat. It started Oct 4<sup>th</sup> and will end Jan 10<sup>th</sup> 2024. 10 PhD students have registered, 9 from Organism Biology and one from the VH faculty.
- c. *Careers outside of academia workshop, autumn 2023*: Vahideh reported that the workshop is organized by Eva Krab with the assistance of Vahideh. It will take place Nov 10<sup>th</sup>, and the last details of the program are just being finalized.
- d. *Analysis of High Throughput Sequencing RNA-Seq Data, autumn 2023*: Katarina reported that this course is arranged by Nicolas Delhomme and colleagues from SLUBI. It has previously been divided into three modules, but for technical reasons it has now been turned into two separate courses, called part I and part II, given back-to-back, where the second is a follow up of part I. See more under §5 below. The courses will be given Oct 23<sup>rd</sup> to Nov 9<sup>th</sup> and last date for registration is Oct 18<sup>th</sup>.
- e. *To communicate science, 2 credits, autumn 2023*: Katarina reported that this course is arranged together with all NJ research schools, and the division of Planning and Communication (Lotta Jäderlund) is the main organizer. It is ongoing right now and will end Nov 15.
- f. *Thesis summary writing workshop, autumn 2023*: Vahideh reported that the "kappa" workshop, also a joint activity with several research schools, was held Oct 6<sup>th</sup>. The organizer is Philip Jacobson at Aqua. We have not yet received information about the outcome of the workshop.
- g. *Genome-wide predictions in breeding: genotype-phenotype associations and genomic selection (previously called Plant breeding for sustainable development), autumn 2023*: This is a new course given for the first time. It is a collaboration with the SLU breeding network and Martha Rendon from Plant Biology is the course leader. It is a very comprehensive course given in a hybrid format including three weeks of scheduled activities with teachers and guest lecturers from all SLU faculties. 13 students have registered (10 PhD, 1 Master, 2 Postdoc), 6 of these belong to our research school. The course will start Oct 16<sup>th</sup> and end in December.
- h. *Visualize your science, 4 credits, autumn 2023*: Katarina reported that we offered 14 spots on this course occasion and they were filled in just a few days. The course is organized in collaboration with Andreas Dahlin at Visualize your Science AB. The course has just started and will end Nov 17<sup>th</sup>.
- i. *Molecular methods: from theory to methods and applications (previously called Community profiling by sequencing), autumn 2023*: Vahideh reported that this is a new course given by Karina and Grace from Mycopat, giving 3+1 ECTSs. It will take place October 13<sup>th</sup> to November 17<sup>th</sup>. First and second announcement have been distributed. 16 students have registered so far, of which about 50% is from Organism Biology.

## §5 Approval of syllabus for new courses, decision

- a. Analysis of High Throughput Sequencing RNA-Seq Data, part I (3 Credits) and part II (1 credit) are two new syllabi based on the course previously given by us every year with the same name. The previous course had 3 modules giving the students a choice to take 2, 3 or 4 credits. Now, since we register the students directly in Ladok, we need to change this so that the credits are fixed. The course leader Nicolas Delhomme therefore changed it into two separate courses, part I and II, where part I is a prerequisite to take part 2. The steering committee approved the two new syllabi with a few minor changes and with an adjustment of the course credit of part II to 1,5 credit.

## §6 Follow up of previously suggested new courses

- a. *Popular Science Writing (Tomas Linder)*: This is a course discussed previously, suggested by Tomas Linder at Molecular Sciences. Katarina has reached out to the five other NJ research schools, and at least two of them are interested in joining in arranging this course. Katarina suggested that we include this course in the 2024 budget and ask Tomas for a sharp version of the Syllabus for approval. The Steering committee agreed on this.
- b. *Journal Club course (Alyona Minina)*: This is a course suggestion brought up by Peter at the previous meeting. Katarina asked Petra (FUN) if it is possible to give Journal Clubs as part of the Research schools courses. Petra discussed this on a FUN-AU meeting and they decided that Journal Clubs should not merit course credits through the Research schools. This suggestion was therefore declined.

## §7 Program and budget for spring 2024

The coordinators suggested the following activities for spring 2024:

Type of activity	Name of activity	Estimated cost (1000 SEK)
Info	Planning/info meeting	1
Workshop	Annual OB workshop	120
Workshop	How to become a postdoc workshop	0
Course	Practical skills in sequence analysis	45
Course	Visualize your science	110
Course	Quantitative real-time PCR	100
Course	Forest pathology	85
Course	Navigating large biological datasets	50
	<b>Total sum:</b>	<b>511</b>

The total sum available for activities 2024 is 791 000 SEK. The suggestion for spring leaves 280 000 SEK for the autumn activities, which is expected to be enough for what is planned. It was decided that the coordinators should work to realize the suggested activities during spring 2024.

## **§8 Suggested new course, discussion**

Vahideh informed that Mukesh Dubey from Mycopat has suggested a new course called Emerging technologies and their application in sustainable crop protection, 3 ECTS. His suggested syllabus is attached to the protocol. The course includes applications of new technologies such as RNAi and AI in sustainable crop protection. Since it appears to be a broad course and still needs improvement and clarification about content and budget plan as well as to which extent it will attract OB PhD students, the committee decided that Mattias will get back to Mukesh with questions and suggestions regarding the syllabus and to encourage him to reach out also to other research schools that might be more suitable for the course content.

## **§9 Additional questions**

Peter Bozhkov informed that he would like to step down as a steering committee member. He suggested Simon Stael from Molecular Sciences to replace him. Since the decisions about steering group members are taken by the faculty, it was decided that Mattias will forward this suggestion to FUN-NJ.

## **§10 Next meeting**

The next meeting will take place Dec 11<sup>th</sup> at 10-12 in room A402.

Attachments:

- a) Decision from FUN-NJ, Director of studies for the research school Organism Biology
- b) Course suggestion Emerging technologies and their application in sustainable crop protection

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Katarina Landberg, secretary

Date and Place

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Marisol Sánchez García, adjutor

Date and Place



Sveriges lantbruksuniversitet  
Swedish University of Agricultural Sciences

Fakulteten för naturresurser och  
jordbruksvetenskap  
Nämnden för utbildning på forskarnivå  
(FUN-NJ)

**BESLUT PER CAPSULAM**  
2023-09-08

## Studierektor för forskarskolan Organismbiologi/Director of studies for the research school Organism Biology

### Beslut/Decision

Nämnden för utbildning på forskarnivå beslutar:

att utse Vahidehalsadat Rafieebanadaki till studierektor för forskarskolan Organismbiologi från och med 1 juli 2023 tillsvidare, dock längst till och med 31 december 2025 med möjligheter till förlängning.

Doctoral Education Committee decides:

to appoint Vahidehalsadat Rafieebanadaki as director of studies for the research school Organism Biology from 1 July 2023 until further notice, however no later than 31 December 2025 with possibilities for extension.

### Redogörelse för ärendet/Background

En av forskarskolan Organismbiologis nuvarande studierektorer kommer att lämna sitt uppdrag vid halvårsskiftet med anledning av nya åtaganden vid institutionen. En intresseförfrågan till uppdraget som studierektor för forskarskolan lanserades i mitten av maj 2023 vid institutionen för skoglig mykologi och växtpatologi. En intresseanmälan inkom. Anhållan om att utse Vahidehalsadat Rafieebanadaki till studierektor från och med 1 juli 2023 inkom från institutionen för skoglig mykologi och växtpatologis prefekt Nils Högberg den 31 maj 2023 med komplettering 29 juni 2023.

One of the research school Organism Biology's present director of studies will leave the appointment due to other obligations at the department. A request for interest in the assignments as director of studies for the research school Organism Biology was distributed in the middle of May 2023. One application were submitted. The request to appoint Vahidehalsadat Rafieebanadaki as director of studies from 1 July 2022 was received from the head of department at the Department of forest mycology and plant pathology Nils Högberg on 31 May 2023 with additional information 29 June 2023.

### Bilaga/Annex

Bilaga 1. Anhållan från prefekt/Request from head of department

Bilaga 2. Komplettering och CV för sökande Vahidehalsadat Rafieebanadaki /Additional information and CV for applicant Vahidehalsadat Rafieebanadaki

*Följande ledamöter har tillstyrkt beslutsförslaget/Following members have approved of the decision:*

Ingrid Öborn  
Gordana Manevska Tasevska  
**Jesper Larsson (Vice ordförande)**  
Magnus Huss  
Erica Packard  
Aimer Gutierrez Diaz

Notera att Petra Fransson inte deltog i beslutet med anledning av jäv./ Note that Petra Fransson did not participate in the decision due to a conflict of interest.

I tjänsten

Eva Andersson Björkman  
Utbildningsledare

## **Emerging technologies and their application in sustainable crop protection**

Course organiser:	Mukesh Dubey
Credits:	3 ECTs
Course duration:	2 weeks in total
Subject:	Biology
Course type:	PhD course
Language:	English
Teaching approach:	Hybrid
Responsible department:	Department of Forest Mycology and Plant Pathology
Maximum number of students:	16

**Entry requirements:** The course is primarily for PhD students but is open for postdocs and researchers. Priority will be given to PhD students.

**Course Overview:** This course is designed to provide knowledge of new and emerging technologies such as RNAi technologies and Artificial intelligence and their applications for sustainable crop protection. The course will explore innovative approaches to address fundamental challenges associated with pest and disease management and overall crop health while minimising environmental impacts. Participants will engage in lectures and group discussions on interdisciplinary research topics covering new and emerging technologies in plant biology. Participants will take part in field/company visits, and discussions with national and international experts. In addition, students will be involved in writing a grant proposal on the role of emerging technologies in sustainable crop protection.

**Learning outcomes:** After completing this course, students will be able to:

- Get an overview of current and upcoming trends in sustainable crop protection.
- Develop basic knowledge of emerging technologies and their relevance in sustainable plant protection.
- Recognize potential pros and cons of the application of new technologies in crop protection.
- Assess the practical, regulatory, and environmental considerations of using new technologies.
- Develop basic skills to articulate a grant proposal in the context of the role of new technologies in sustainable crop protection.

**Assessment and Evaluation:**

- Active participation in lectures (80% is a must), group discussions and a field visit.
- Developing a scientific grant proposal and presentation

**Course Materials:** Research papers and articles

**Preliminary schedule:**

- Two days of literature study
- Three days of Lectures/seminars with invited national and international scientists.
- One-day of field visit.
- Three days of project writing
- A one-day workshop to discuss and present the project proposal and summarise the course.

**Preliminary Timetable:**

**Literature studies:** (equivalent to two days): The course materials (relevant research papers and articles) will be provided to students for reading in advance (at least one week before the start of the course).

**Lectures and seminars** (equivalent to three days)

**Week 1:**

**Day 1:** 9:00 – 12:00

Course introduction and orientation: Overview of the course structure, expectations, and objectives.

Lectures (two lectures, one hour each, including discussion): Principles of sustainable Crop Protection: Understanding the principles and importance of sustainable pest and disease management.

**Day 1:** 13:00 – 16:00

RNAi technologies and their application: Spray-induced gene silencing (SIGS).

**Day 2:** 9:00 – 12:00

Precision agriculture: Applications of GPS, drones, remote sensing, and data analytics for pest and disease mapping.

**Day 2:** 13:00 – 16:00

Genetic engineering and their role in developing disease and pest-resistant crops.

**Week 2:**

**Day 3:** 9:00 – 12:00

Nanotechnology and its applications in targeted pesticide and dsRNAs delivery.

**Day 3:** 13:00 – 16:00

Regulatory considerations: Regulatory, ethical, and environmental aspects of using new technologies.

**Field Visit** (one full day): Visit a local farm/company practising sustainable crop protection.

**Week 3:** (Equivalent to three days of work):

**Research Project Development:** Participants will write a research proposal based on course concepts (group work).

Maximum length: 3 A4 pages, single line space, font size 12

Outline: Title, Aims and Objectives, Rationale, Introduction, Methodology, Expected outcome and its potential application in crop protection.

**Workshop** (one full day): Students will present their grant proposal in the workshop. Which will be followed by a group discussion and feedback from the teachers.

**Contact person for further information:** Mukesh Dubey, mukesh.dubey@slu.se

**Additional information:** I expect students from both the Campuses, Ultuna and Alnarp. The field visit will be planned at Skåne as plant breeding companies work on various aspects of emerging technologies.



### Preliminary budget

Expenses	Activity	Quantity	Single cost (SEK)	Total cost (SEK)	Notes
Half-day salary for international teacher 1	Lecture and follow-up discussion.	1	1000	1000	I will invite two international teachers.
Half-day salary for international teacher 2	Lecture and follow-up discussion.	1	1000	1000	
Two half-day salaries each for six national teachers	Lecture and follow-up discussion, participation in the workshop.	6	800	$4800 \times 2 = 9600$	Lecture and participation in workshop (two half day)
Cost of lecture room	For lectures	30 hours	250 SEK per hour before 12:00; 125 per hour after 12:00 for 30 hours	$5250 \times 2 = 10500$	I expect students from Campuses Ultuna and Alnarp, so I will book rooms at both campuses from 9:00 - 12:00 and 13:00-16:00.
Salary for Mukesh Dubey	Lecture and course coordination and participation in Workshops, reading the grant proposal.		1640	$1640 \times 3 = 4920$	
Travel expenses for students from Ultuna to Skåne	Field visit	8 train tickets from Uppsala to Malmö and vice versa	1500 Sek	12000	I expect a minimum of 6 students from Ultuna.
Travel expense	Field visit	A vehicle	5000	5000	To take students from the Ultuna campus and Alnarp campus to the field.
Field visit	Lunch	Lunch for 16 students	150	2400	
Fika	Mingling and goodbye	2	500	1000	Fika at the beginning and end of the course.
Total				47420	

# Signature page

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