

Guidelines

International Max Planck Research School (IMPRS) “Chemical Communication in Ecological Systems”

This document outlines the academic responsibilities and rules of good doctoral supervision implemented in the joint MPI-CE and FSU international PhD program “Chemical Communication in Ecological Systems”.

I. IMPRS requirements

The IMPRS curriculum is designed to provide theoretical knowledge in chemical ecology and to confer competence in statistics, analytical chemistry, microscopy, molecular biology, biochemistry, ecology and evolution. In addition, IMPRS doctoral researchers (DRs) shall acquire complementary skills necessary for a successful career in science and be supported in making informed career choices.

To successfully pass the IMPRS program, DRs have to complete coursework equivalent to 30 ECTS credits, consisting of mandatory elements worth of 24 ECTS and elective elements worth of 6 ECTS credits (Table). Credits collected in courses of the Jena Graduate Academy, the ILRS, JSMC, IMPRS-gBGC or γ Div will be considered equivalent. Other external course credits will be subjected to careful evaluation and transformed to match IMPRS standards if need be.

At the beginning of the PhD studies, the IMPRS coordinator and TAC members make training recommendations tailored to individual DR's needs. The current IMPRS course program and course archive can be found on the IMPRS website. The IMPRS office will keep a record of course activities/collected credits, but the final responsibility for completeness of this record resides with the DR.

Mandatory elements of the IMPRS curriculum comprise the following:

- 1) Participation in 2/3 or more of the basic lectures (20 of 33 over a three-year period)
- 2) Completion of at least two method courses or mini lecture series
- 3) Completion of at least two transferable skill courses
- 4) Attendance of all IMPRS symposia unless there is a conflict with field research or other work-related requirements.
- 5) Contributions to three IMPRS symposia, either through a poster or a talk presentation.
- 6) Completion of TAC meetings at 6, 18 and 30 months to discuss and document progress (fill in the progress report form)

- 7) Completion of at least one public relation activity. This can either be a talk to a lay public, e.g. high school students, teachers, journalists, or an article e.g. in a newspaper, a non-scientific journal or the institute's newsletter (PULS-CE), or an activity within the "Forsche Schüler Tag", "The Long night of the Sciences" etc.
- 8) Completion of the annual course on "Good Scientific Practice"

To collect **elective credits**, students may complete additional mandatory elements (see above) or engage in one of the following activities:

- 1) Serve as MPI-CE wide, FSU-wide or MPI-CE departmental PhD representative
- 2) Help organize the IMPRS symposium or IMPRS recruitment, e.g. host speakers
- 3) Be a mentor to recruitment invitees or tutor to early PhD candidates
- 4) Supervise a BSc or MSc student
- 5) Teach in FSU course modules or IMPRS courses
- 6) Participate in career development events (excursion, workshops, speed informing)

Credit point system for the potential IMPRS "Chemical Communication in Ecological Systems".

Curriculum Components	ECTS Credits	Assessment	Credits Needed
Mandatory			24
Basic lectures	0,15 per lecture	Attendance	3 (20 out of 33)
Scientific skill courses or mini lecture series	1,5 per course	Active participation	3
Transferable skill courses	1,5 per course	Active participation	3
Annual symposium	2,5 per contribution	Poster or talk	7,5
TAC meetings	2 per TAC	Presentation and progress report	6
Public relations requirement	1	Active participation	1
Good scientific practice	0,5	Active participation	0,5
Elective			6
External or internal student representative	3 (external) 1 (internal)	Active participation	
Participation in the organization of the IMPRS symposium/IMPRS recruitments, e.g. taking care of speakers	1-2	Active participation	
Tutor for new students	1	Active participation	
Supervision of BSc/MSc students	2 (BSc) 3 (Msc)		
Teaching (university lectures or course, IMPRS courses)	2-3 (case by case)	Active participation	
Career development (excursion, workshops, speed informing)	1 per activity	Active participation	
Additional mandatory elements	ECTS for respective mandatory elements apply	Assessments for respective mandatory elements apply	

In addition, all DRs are asked to create their own personal homepage using the templates provided by the MPI-CE and participate in the appropriate departmental lab meetings, MPI-CE seminars and FSU colloquia during all academic years.

II. FSU admission and examination

It is the responsibility of the student to apply for admission as a doctoral candidate at either the Faculty for Bioscience, the Faculty for Chemistry and Earth Sciences or the Faculty of Mathematics and Computer Science within the first two months of starting work on his/her PhD project. For the admission as well as the submission of the PhD thesis and the dissertation defense the doctoral examination regulations of the respective faculties apply.

III. Rules of good doctoral supervision*

Supervisors:

1. You are a mentor of your DRs: you will promote the independence of your DRs; you will progressively transfer to your DRs increasing responsibility for the scientific success of the project and give them the opportunity to be visible in the scientific community.
2. Your interaction with your DRs is cooperative: you will meet with your DRs on a regular basis for scientific discussions. In scientifically challenging phases of the doctoral project, you will contribute with your experience as a scientist and a scientific manager to promote the success of the project.
3. You will share with your DRs all the information that is important for the success of the project.
4. You will be of support to your DRs also in non-scientific issues (e.g. health or family), in particular in those issues that could affect job performance and the success of the doctoral process. You will promote the social integration of your DRs in the research group. In the case of foreign DRs, you will support their general social and cultural integration in the larger community of the institute. Additional administrative help will be provided by the IMPRS Office.
5. The level of performance that you will demand from your DRs should promote and encourage them, but not be overwhelming. You will respect family responsibilities (e.g. child care). You will allow and respect different working patterns, together with requests for further training (both scientific and not).
6. From the beginning of the PhD project, you will discuss and enforce transparent rules that are applicable to all members of the research group. You will discuss and agree a time management plan for the doctorate with your DRs. You actively support the doctoral candidates in an independent way of work planning and provide for the necessary freedom.
7. You will promote the scientific career of the DR by helping to establish contacts to other scientists in the field and by providing assistance in finding a position after finishing the IMPRS project.

Doctoral Researchers:

1. You will work with enthusiasm at the best of your abilities on the doctoral project. You will consistently work on your scientific development and keep yourself updated with the literature. You will promote a collaborative working style and will be willing to discuss your work and results. You will accept critical comments and be ready to use them as a starting point for improvement.
2. You will inform the supervisor immediately of any difficulties or problems whether they are of a professional or non-professional nature - particularly if these could jeopardize the success of the doctoral project or delay its progress. You will keep your supervisor regularly informed about progress of the project and about expected or unexpected results.
3. You will integrate into the workgroup (scientifically and socially). You will adhere to the rules of the work group; share the use of equipment, measurement times, computer use and the use of other resources. You will treat with the greatest care the workgroup's tangible or intangible valuables.
4. You will fulfil your assigned scientific tasks autonomously. You will independently organize and plan the running of your research project without daily monitoring and evaluation by your supervisor.

Thesis Advisory Committees (TACs):

1. They will critically and supportively follow the doctoral process. Its members will offer advice in scientific matters, career planning and in cases of conflict with the direct supervisor. When thesis advisory committees are appointed, it is taken care that the committee members are independent of each other and of the direct supervisor.
2. They will give DRs and supervisors constructive feedback at the regular TAC meetings. They will contribute their scientific knowledge, skills and experience to support the project.
3. In the case of conflict between the DR and the direct supervisor, they will help to find a solution. In doing so, they will be obliged to remain neutral to all parties involved in the conflict. Where it is not possible, or where no solution can be reached, they will delegate the case to the speaker/coordinator of the doctoral program.

Furthermore, the doctoral researcher and the supervisors agree upon the following:

1. DRs and supervisors commit themselves to the Rules of Good Scientific Practice.
2. DRs and mentors aim for early publication of the data produced within the research project in peer-reviewed scientific journals and for a cumulative dissertation.
3. TAC meetings are held at 6, 18 and 30 months into the PhD project.
4. The DR has to be granted sufficient time to attend courses, etc. within the IMPRS curriculum.
5. Interdisciplinarity is one of the goals of the IMPRS projects and thus are fostered by the DRs and the supervisors.
6. In a conflict situation either or both parties should contact either another TAC member or the IMPRS coordinator who will assist in solving the conflict, or finding a neutral mediator, if necessary.

*These rules were to a large part inspired by the guidelines of the "Georg-August University School of Science (GAUSS)" and the "IMPRS for living matter: from molecules to dynamics" and merged with guidelines that are being followed in the existing IMPRS "The Exploration of Ecological Interactions with Chemical and Molecular Techniques".