TECHNISCHE UNIVERSITÄT DRESDEN

DRESDEN concept

Collaborative Research Centre 940

Volition and Cognitive Control

Modul Graduiertenkolleg (MGK)

Program Information and Record of Achievement

VOLITION AND COGNITIVE CONTROL

MECHANISMS
MODULATORS
DYSFUNCTIONS

CONTENT

PREFACE

Dear Students,

welcome to the Collaborative Research Center (CRC) 940 "Volition and cognitive control"! It is our firm belief that in order for you to work in the respective CRC 940 projects with highest motivation and ideal chances for developing your scientific careers, we need to provide you with a structured and inspiring learning environment: the PhD program MGK[1] Volition.

CRC 940 aims to investigate the volitional control of emotion, motivation, and action as well as its constraints, i.e., influences of emotional and motivational dispositions on control processes, and its dysfunctions. This broad integrative aim requires not only a detailed understanding of contemporary theories on volitional control processes including their underlying neuroanatomical and neurochemical mechanisms. It also demands for a sound knowledge of methodological means to study and model them. Hence, lectures, schools, workshops, and courses will provide you with the necessary scientific background, but also with general skills required for working in science.

It is our intention to aid your development into an independent and intellectually competitive researcher. We expect the MGK Volition to significantly enhance your prospects in science, and we will do our best to make the following years a great time for you.

With our best wishes for your PhD studies,

Thomas Goschke
CRC Speaker & MGK Represent

Alexander Strobel
MGK Coordinator

Anne Gärtner
MGK Coordinator

[1] We originally wanted to give the program a fancy name, but no one cared and used it, so the program is now simply called MGK after the DFG abbreviation for *Modul Graduiertenkolleg* as part of a Collaborative Research Centre.

GENERAL INFORMATION ON THE MGK PROGRAM

Qualification Concept

Young researchers working within CRC 940 have the opportunity to participate in a collaborative research program. They will develop their knowledge and skills under the active supervision of the Principal Investigators (PI) of the CRC 940 subprojects. The specific requirements of these projects demand a highly specialized knowledge and focus. However, the development of a comprehensive understanding of the matter is essential for effective and efficient work within the broader context of CRC 940. Thus, young researchers will be enrolled in a structured PhD program – the MGK Volition – enabling them to acquire state-of-the-art theoretical, empirical, and methodological expertise beyond their specialty areas. Supported by an excellent and stimulating interdisciplinary environment, the program will enable students to achieve distinguished PhDs and thus to build a solid basis for successful scientific careers in manifold areas. The major objectives of the MGK are to provide young scientists with the necessary knowledge and skills to autonomously plan and conduct scientific research on a sound theoretical and methodological basis. Furthermore, they will be trained to develop their field of research with original scientific contributions, to communicate and defend their results at scientific meetings and in peer-reviewed publications, and to acquire key qualifications for the advancement of their scientific careers.

To this end, our MGK aims at the provision of highest-standard proficiency via

- transfer of CRC-related knowledge and methods
- structured learning environments by combining existing programs and facilities of the TU Dresden with CRC-organized training
- support of cross-project, national and international collaboration
- promotion of individual development and support for compatibility of career development and family care

Summary. The integrated structured training program MGK Volition has been a vital part of the present *Collaborative Research Centre (CRC)* since its establishment in 2012. It aims at providing doctoral researchers working within the CRC with the highest-standard proficiency for outstanding research in the field of volition and cognitive control. To this end, the MGK curriculum supports all participating young scientists in the autonomous planning and execution of research on a solid theoretical and methodological basis, in the expansion of their field of research by original scientific contributions, in the international communication and defense of their results at scientific conferences and in peer-reviewed publications as well as in the acquisition of key qualifications necessary for the further development of their scientific careers. Doctoral students are integrated into an excellent and stimulating interdisciplinary research and teaching environment that promotes the efficient completion of their doctoral thesis and the establishment of international networks. Based on a comprehensive assessment of the previous funding periods, we will continue to provide its curriculum that comprises a series of *Lectures* including an introductory part in the first semester and an MGK Colloquium where MGK members can regularly exchange ideas and results. *Schools* will be held each spring with the opportunity for doctoral students to learn about current developments in the field and discuss their research with internationally leading experts in cognitive-affective neurosciences. Furthermore, we will pay particular attention to open scientific practices and professional research data management, because, in our opinion, the MGK should support doctoral students in conducting high-quality research not only concerning the research questions addressed, the approaches taken and the methods used, but also with regard to the transparency and credibility of their research. Therefore, the new *Open Science* element will be established that will primarily consist of mandatory workshops on good scientific practice, research data management and research transparency, to be held in the first year of the curriculum. We will continue to provide CRC-organized workshops to acquire *Skills* in scientific techniques such as neuroimaging, programming, data analysis, modelling and scientific writing, while for additional key qualifications for successful scientific careers such as management and teaching skills we will draw on the offers of the TU Dresden and its Graduate Academy in particular. Finally, *Support* throughout our students' dissertation projects will be provided by their supervisors and a co-supervisor, by continuous monitoring via progress reports, by annual self-organized retreats, and by a Travel Award. Special emphasis will again be put on fostering the achievement of women in science and the compatibility of career development and family care for young parents.

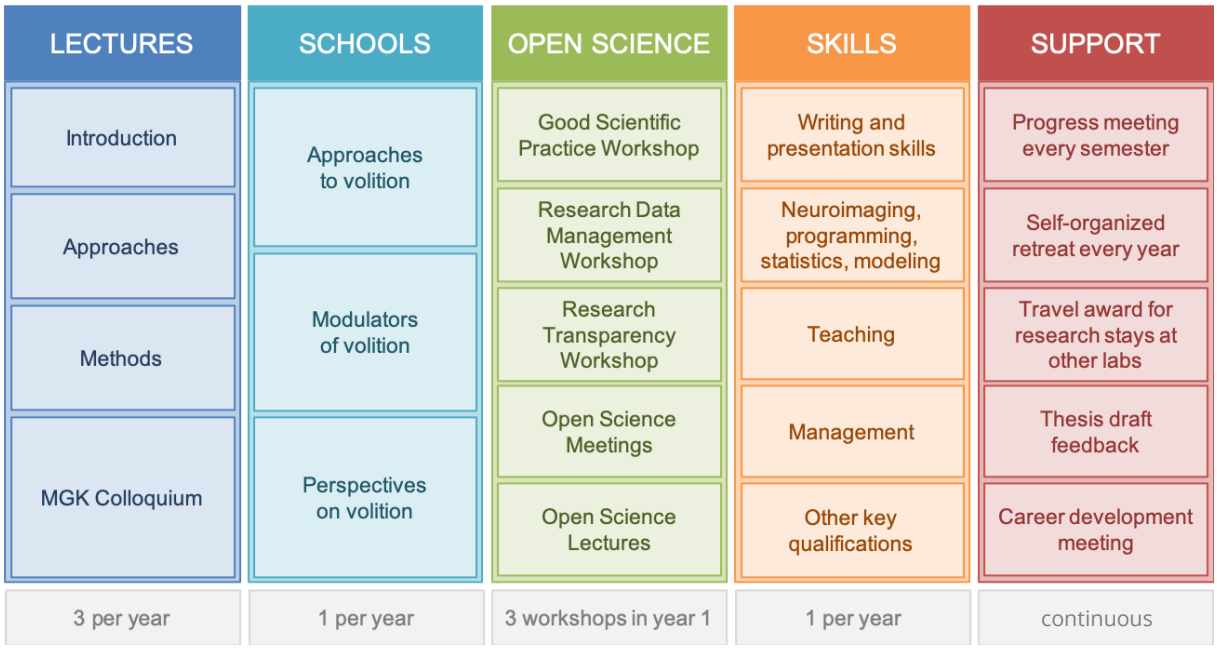

Figure 1. MKG Volition curriculum including expected number of attendances per year

The 3-year PhD curriculum is intended to achieve these aims without prolonging and overregulating the PhD phase and thus mainly comprises block courses. With an estimated maximum of two hours per week, the program is as slim as possible considering the comprehensive study topics. Throughout the program students' independence will be fostered. They will have the opportunity to actively participate in the implementation and organization of the courses including the administration of financial resources. The program comprises five program elements sketched in Figure 1 and detailed in the following:

Lectures will be a central element of the MGK *Volition* program, and we will continue to rely on established lecture series such as the *Bühler Colloquium* and the *NIC Colloquium* at the Neuroimaging Center that have proven to provide CRC-related lectures. At least three lectures are to be attended per year. Further measures will be taken to ensure CRC-related knowledge to be conveyed: First, a series of CRC-specific lectures will be offered informing about the scientific concept of the CRC as a whole as well as on the objectives of the research projects of its three clusters, i.e., mechanisms, modulators, and dysfunctions of volition. Second, ahead of each semester, the MGK organizing team will check the announced lectures of the existing colloquia with regard to CRC-relevant talks and may organize additional lectures.

Spring Schools will complement the lectures and will inform about current advances in the field of volition research. The spring school series will give young researchers of CRC 940 an excellent opportunity to (a) meet leading international experts in research fields related to the CRC, (b) learn about the latest developments in these fields, (c) present and discuss their research within an interdisciplinary context with internationally distinguished experts as well as other doctoral students and post-docs, and (d) facilitate network building for the young scientists. The first spring school is intended to focus on "Mechanisms of volition", informing about the various concepts of volition

including the means to study them, thereby providing a common background upon which the students later on develop and advance their own studies and projects. In the second year, the focus tentatively will be on "Modulators of volition", and the third spring school's planned theme will be "Perspectives on volition" and will be devoted to the broader implications of cognitive-affective neuroscience research. These topics are of course subject to change according to the students' needs and interests. Young scientists will have the opportunity to get into contact with distinguished senior scientists with long standing experience and to discuss not only their research, but also their long-term career goals. Apart from dealing with scientific topics, the spring schools will provide a platform for events of the *Women in Science* program. This program is intended to stimulate reflection and discussion about women's careers in science and to provide advice and help on various issues. Spring schools will comprise an MGK general summit, will take place once a year and will be organised by the coordinating team in collaboration with the MGK students.

Open Science will be a new and integral part of the curriculum. The reason is that, in our opinion, the MGK should support doctoral students in conducting high-quality research not only with regard to the research questions, approaches and methods used, but also with regard to the transparency and credibility of their research. The efficient application of open science practices also requires an efficient research data management. Two developments during the second funding period now enable us to better instruct and support the doctoral students in this regard. First, an Open Science Initiative has been founded at the Faculty of Psychology (OSIP, see https://tu-dresden.de/mn/psychologie/die-fakultaet/open-science) and an increasing number of researchers, among them members of the CRC, are actively involved in this initiative. Second, the Information Infrastructure (INF) project of the CRC developed streamlined tools for research data management not only for imaging projects at the Neuroimaging Centre, but also for individual projects. Therefore, together with OSIP, the Faculty's trainers for good scientific practice and the INF project, the MGK will provide three mandatory one-day workshops on *Good Scientific Practice*, *Research Data Management* and *Research Transparency* in the first year of the program. Furthermore, the students will be encouraged to become OSIP members and/or attend the OSIP meetings and lectures to foster exchange on Open Science related issues and practices.

Skills courses will be attended according to individual needs. While the focus of this program element is on the improvement of writing and presentation skills, the acquisition of further methodological knowledge and abilities in the field of cognitive neuroscience, (self) management, teaching abilities, and language skills will also be important. One *skills* course per year has to be completed during the PhD phase. Incoming PhD students will be offered a high-standard curriculum that balances the acquisition of theoretical and methodological knowledge with practically-oriented courses on essential scientific abilities. On the one hand, we will resort to courses offered at the *Centre for Continuing Education* (Zentrum für Weiterbildung) or the Graduate Academy. On the other hand, MGK organized courses comprise more specialized courses such as MATLAB programming and functional magnetic resonance imaging techniques or may be crash courses in experimental programming using e-Prime, Presentation, or the PsychToolbox. These topics will be offered on a regular basis in two "Workshop Weeks" accompanying the Spring School in March and the annual CRC retreat in autumn.

Support for individual advancement in science and a successful completion of the PhD thesis will be provided by a dual supervision: Each MGK participant will be supervised by his or her main supervisor, supported by a second supervisor, who will invite the student to progress meetings. Self-supervision will be supported by annual self-organized retreats of MGK participants, where they will discuss their projects, exchange ideas, knowledge, and methods, perhaps aided by to-be-invited other researchers. Further elements of this part of the MGK program are a thesis draft feedback by at least one supervisor and a career development meeting with both supervisors in the last year. Moreover, it will be the responsibility of the supervisors to communicate and explain the rules for good scientific practice.

Supervisory Concept

As mentioned above, all MGK PhD students are supervised by their main supervisors, supported by a second supervisor, with the rights and duties of the respective parties being defined at the outset of every PhD project. Recently, detailed written guidelines for the supervision of doctoral dissertations within the CRC 940 have been issued. They provide a framework for binding student-supervisor relationships and will be distributed to all PhD students and their supervisors. The latter are responsible for inviting the students to regular progress meetings (two per year, at least one attended by both supervisors), where the students report on their on-going work including possible challenges and perspectives, on past and planned attendance of scientific meetings or other platforms for scientific exchange, and on their further studies within the MGK program. The supervisors are to give feedback and together with the students will identify issues that need to be addressed more thoroughly during the next semester. These issues are recorded in written form as an agreement of objectives that is intended to aid the PhD students in pursuing their study goals and to ensure adequate support by their supervisors. The supervisors will also give thesis draft feedback in the final year and will discuss possible career tracks with the PhD students in a career development meeting, also in the last year. Self-supervision will be promoted by annual self-organized retreats of the participants.

The MGK provides the students not only with scientific, but also with practical and immaterial support. To this end, firstly, the *Women in Science* program has been issued. Here, events on gender-related issues will be organised and will comprise, e.g., panel discussions, training, and mentoring. Secondly, young researchers with children will receive support to reconcile their family requirements with the advancement of their scientific careers. Thirdly, we offer help for new (especially foreign) students via the TU Dresden Welcome Center and the CRC 940 coordinating team (e.g., aid in finding a flat or in coping with administrative requirements).

Organisational Structure

The speaker of CRC 940 Thomas Goschke represents the MGK Volition. Chief and deputy coordinator are Alexander Strobel and Anne Gärtner, who are supported by coordinating staff. Together they run an MGK office, which aids the MKG students in all formal issues. Students will be represented by a speaker and his/her deputy to be elected by the MGK student members at the MGK general summit.

The student participants of the MGK program comprise all PhD students working within the subprojects of CRC 940. Additionally, further PhD students of the Faculty of Psychology and the Medical Faculty of the TU Dresden can be assigned as associated MGK members by the CRC coordinating team upon application, given that their study areas are related to the CRC research focus and that their association will result in a joint benefit for the respective students, the MGK program, and the CRC 940 as a whole. In addition, associate membership can be supported by up to two Doctoral Fellowships per year, either (a) to students of the TU Dresden, who can set up a CRC-related doctoral project during the funded year or (b) to young researchers from other national or international institutions, who plan to perform part of their volition-related research within the context of CRC 940. This measure is intended to support bonding of promising scientific talents to CRC 940 and to set up additional research projects, which may be associated to the CRC in later project phases.

STUDENT-SUPERVISOR RELATIONSHIP

Purpose

The Deutsche Forschungsgemeinschaft (DFG) has issued a recommendation[2] concerning standards for mentorship that clearly define the student-supervisor relationship in written form. The MKG Volition follows this recommendation by requiring the Principal Investigators of the individual subprojects who supervise PhD projects to work out an agreement on objectives together with their students. In addition, the MGK recently issued written guidelines for the supervision of doctoral dissertations within the CRC 940 which detail obligations and rights of both parties and specify procedures in case of conflict.

Guidelines and signed student-supervisor agreement are intended to foster a structured cooperation between supervisors and PhD students and to ensure that the PhD project can be realised in high quality within a reasonable time frame.

Contents

The agreement should at the least include specifications regarding:

- persons involved (PhD student, main supervisor, second supervisor etc.)
- subject/working title of PhD thesis
- structured work schedule specifying time course and subtasks of the project
- tasks and obligations of the PhD student (e.g., regular reports, attendance of training programs)
- tasks and obligations of the main, and second supervisor, respectively (e.g., regular progress monitoring and professional counsel and support, quality management, career development)
- integration in the MGK program,
- workplace and equipment to the PhD student's disposal
- commitment of both parties to safeguard good scientific practice[3]
- procedures in case of conflicts between the interested parties
- measures and procedures to balance between a career in research and family.

A template for such a supervision contract can be found in Appendix A. Necessary further issues can complement it, but it should not be curtailed or changed in relevant detail without checking back with the MGK coordinators. You may also use the template provided by the Graduate Academy (https://tu-dresden.de/ga/ressourcen/dateien/mitgliedschaft/mitgliedschaftsdokumente/Betreuungsvereinbarung.pdf)

[2] DFG-Vordruck 1.90 – 10/19: http://www.dfg.de/formulare/1_90/1_90.pdf

[3] see https://tu-dresden.de/tu-dresden/qualitaetsmanagement/gute-wissenschaftliche-praxis-an-der-tu-dresden as well as the „Guidelines to Safeguard of Good Scientific Practice of the TU Dresden" in Appendix B

CONTACT INFORMATION

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Open Science Initiative of the Faculty of Psychology (OSIP)

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https://tu-dresden.de/mn/psychologie/die-fakultaet/open-science

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graduiertenakademie@tu-dresden.de
https://tu-dresden.de/ga

TU Dresden Centre for Continuing Education

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zfw@tu-dresden.de
http://tu-dresden.de/karriere/weiterbildung/zentrum-fuer-weiterbildung

TU Dresden Welcome Center

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0351 – 463 34009
welcome.center@tu-dresden.de
http://tu-dresden.de/internationales/intsc/welcome_center_ml/startseite/welcome_center

RECORD OF ACHIEVEMENT

In order to track your record of achievement during your PhD studies, the following pages supply you with forms. Please fill in each form and provide the requested details on the lectures, schools, courses and formal meetings you attend. Do not forget to let the organizer or an official sign the respective entry and to attach a copy of your certificate of attendance to this folder.

In order to complete the PhD study program, you need to attend during your PhD studies:

Program element	**Minimum number**
Lectures	3 per year
Schools	1 per year
Open Science	3 workshops in year 1
Skills	1 per year
Support: Progress meetings	1 per year recommended

Please note: As you will see, the forms contain lines shaded in the color of the program that indicate the minimum number of attendances. Most forms contain additional lines. This should by no means be understood as an implicit suggestion of the "real" number of events, a "good" PhD student should attend "voluntarily". Rather, these lines can just be left blank or can simply be used to track optional events that you attended to supplement your studies. If you wish to record further attendances beyond the space given, please request additional forms at the MGK coordinating office.

LECTURES

Name .....

Date	Title	Organizer Institution	Organizer's Signature

SPRING SCHOOLS

Name

.....

Date	Title	Organizer	Organizer's Signature

SPRING SCHOOLS

Name

.....

Date	Title	Organizer	Organizer's Signature

SKILLS

Name

.....

Date	Title	Organizer	Organizer's Signature

SUPPORT: PROGRESS MEETINGS

Name

.....

Date	Topic	Supervisor	Supervisor's Signature

EVENTS AND COURSE OFFERS

Lectures

Upcoming lectures are announced on the CRC homepage under *Events.*

https://tu-dresden.de/bereichsuebergreifendes/sfb940/events

The lectures listed on the CRC homepage are part of varying series of invited talks such as the *Bühler Colloqium* at the Faculty of Psychology and the research colloquium of the Neuroimaging Center (NIC). The complete programs of these colloquia are announced at the beginning of each semester. Of these, primarily the talks related to the CRC's topic of volition and cognitive control will be announced on the CRC homepage. However, the colloquia will include further lectures not directly related to the CRC which will nevertheless address recent issues in the field of psychology and psychiatry. Since one aim of your training is to foster interdisciplinary research approaches, we also recommend the attendance of lectures with topics outside your own research interests. Thus, you might also want to consult the respective colloquia's full programs:

https://tu-dresden.de/mn/psychologie

https://tu-dresden.de/bereichsuebergreifendes/nic

Schools

Each spring, the Dresden Spring School on Cognitive-Affective Neuroscience will be held, preferably during the Pentecost holidays because of no teaching obligations during this week. All MKG members are expected to attend these schools. Detailed information will be available soon and will be communicated via email.

Open Science

Within the first year, you will attend the workshops on Good Scientific Practice, Research Transparency, and Research Data Management, which are organized by the MGK coordination team together with the Good Scientific Practice Officers of the Faculty of Psychology, OSIP, and the Information Infrastructure Project of CRC. A selection of relevant papers, videos, and other resources will be provided to you online in order to make yourself familiar with each of the three topics on your own terms. You will then have the chance to discuss these topics with your fellow PhD students and ask any questions to the instructor using the platform OPAL (details will be announced soon):

https://bildungsportal.sachsen.de/opal/auth/RepositoryEntry/25989742594

The workshops will also include live teaching sessions which aim to give you hands-on experience with standards, software, tools, and workflows facilitating Open Science. Including the time that you need to go through the material provided online, each of the three workshops is intended to take 10 hours in total.

Skills

Over the course of the next three years, the CRC will offer special courses focusing on the acquisition of theoretical and methodological knowledge as well as crucial scientific abilities. These courses and workshops will be adjusted to your needs. Thus, in addition to essential and well-tried courses on MATLAB programming or functional magnetic resonance imaging techniques, the MGK coordinating office will inquire in regular intervals about your requests and plan workshops accordingly. We also encourage you to contact the MGK coordination team on your own initiative with suggestions for course topics.

In addition to courses organized by the CRC, the *Centre for Continuing Education* of the TU Dresden regularly offers workshops on, for instance, teaching, research management, scientific communication, or grant application. The following table gives a small exemplary selection of workshops in the winter semester 2020/2021.

Workshop Title	Max. Participants	Date	Registration Deadline
Wirken durch Stimme - Stimm- und Sprechtraining für berufliche Vielsprecher:innen	10	03./09./20.11.2020	21.10.2020
Besprechungen effizient und kreativ moderieren	12	04./05./27.11.2020	19.10.2020
Storytelling in der Lehre - ein Online-Workshop zur Kunst des Erzählens	12	01./02./08./09.02.2021	15.01.2021
Academic Writing in English (Humanities and Social Sciences)	12	19.-22.04.2021	12.04.2021
Feedback zu schriftlichen Arbeiten	10	10.-12.05.2021	03.05.2021

Since the *Centre's* program is updated each semester, you are expected to inform yourself and to find suitable courses autonomously. The *Centre for Continuing Education* also offers to tailor courses and workshops to your needs! Your course choices should be discussed with your supervisor and/or the MGK coordinating team before attending to ensure that their costs are covered by the MGK budget. Detailed information on the *Centre's* courses and workshops can be found at:

http://tu-dresden.de/weiterbildung/zentrum_fuer_weiterbildung

If you consider to improve your English or another language, you might want to attend language courses offered at the TU Dresden. More information can be found at:

http://sprachausbildung.tu-dresden.de

Support

Members of the MGK in association with the board of the *Women in Science* program have recently issued guidelines for the supervision of doctoral dissertations which are provided to you in a separate brochure. These guidelines provide a basis for the arrangement of a binding student-supervisor relationship and define the role of the MGK with respect to supervision. Your first obligation upon joining the MGK program is to familiarize yourself with these guidelines. Arising questions should be discussed promptly with your supervisor and/or an MGK representative. Following, with the help of your supervisor you are to draft an exposé of your PhD project including a work program and a time schedule in order to provide the necessary prerequisites for the agreement of objectives that should be signed by you, your main and second supervisor, and an MGK representative by the end of the winter semester (i.e., 31.03.2021).

APPENDIX

A. Template for an agreement on objectives[1]

B. Safeguard of Good Scientific Practice of the TU Dresden[2]

[1] You may also use the template provided by the Graduate Academy:
https://tu-dresden.de/ga/ressourcen/dateien/mitgliedschaft/mitgliedschaftsdokumente/Betreuungsvereinbarung.pdf

[2] You may find an updated version of this safeguard at the TU Dresden webpage:
https://tu-dresden.de/tu-dresden/qualitaetsmanagement/gute-wissenschaftliche-praxis-an-der-tu-dresden

SUPERVISION AGREEMENT

between

the PhD candidate _____

the first supervisor _____

the second supervisor _____

and the graduate college MGK Volition of the CRC 940 represented by _____

1) Dissertation subject

As of _____. _____. _____ the PhD candidate develops a dissertation on the subject of:

_____

_____

An exposé of the dissertation project has been set up and attached as Appendix 1.

2) Time and work schedule

A time and work schedule (see Appendix 2) has been prepared for the dissertation project which facilitates the dissertation to be finished within three years. Supervisors and the graduate college will make every effort to ensure that this schedule can be adhered to. Changes of this schedule require mutual consent in written form.

3) Responsibilities and duties of the PhD candidate

The PhD candidate

(1) commits to the adherence to the time and work schedule as well as to regular reports regarding partial results of their dissertation project.

(2) informs the supervisors about their progress and their further training at least once every semester.

(3) commits to participation in the study program of the MGK Volition and is entitled to all program measures within the existing resources.

4) Responsibilities and duties of the first supervisor

The first supervisor

(1) supports the PhD candidate's scientific autonomy and quality.

(2) commits to regular professional guidance for the PhD candidate as well as to consultations regarding the PhD candidate's progress and adherence to the time and work schedule at least once every semester.

(3) provides constructive feedback on the first draft of the dissertation thesis within a reasonable amount of time.

(4) advises the PhD candidate on career development in at least one consultation towards the end of the doctoral studies.

(5) commits to supervision until the dissertation is completed, irrespective of the funding duration.

5) Responsibilities and duties of the second supervisor

The second supervisor

(1) supports the first supervisor in the professional guidance of the PhD candidate and partakes in the consultations at least once a year (see 4(2)).

(2) advises the PhD candidate on career development in at least one consultation towards the end of the doctoral studies.

(3) provides constructive feedback on the first draft of the dissertation thesis to the extent possible.

(4) is available to the PhD candidate as an independent consultant regarding their dissertation project and career development.

6) Structural integration

The dissertation project will be conducted within the CRC 940 "Volition and Cognitive Control" and accompanied by the structured dissertation program MGK Volition. The PhD candidate is an MGK member until the end of their dissertation or the end of the funding phase, respectively.

7) Working conditions of the PhD candidate

The PhD candidate will be provided with:

Workstation	☐	Telephone	☐	_____	☐
PC	☐	Laboratory access	☐	_____	☐
Internet access	☐	Scanner access	☐	_____	☐

8) Rules of good scientific practice

All signers are obligated to abide by the rules of good scientific practice.

9) Behaviour in case of conflict

In case of conflicts between the PhD candidate and the supervisor(s) the persons concerned can approach the MGK coordinators. Matters of scientific misconduct may be addressed to the ombudsperson of the Technical University of Dresden or of the German Research Foundation, respectively (see https://www.dfg.de/en/research_funding/principles_dfg_funding/good_scientific_practice/ombudsman/index.html).

10) Reconciliation of family and science

The CRC 940 and the MGK Volition support the reconciliation of work and family. General measures include the offer of childcare beyond regular care time as well as a flexible work schedule. Specific measures will be agreed upon as needed.

Dresden, ___. ___. _____

PhD candidate	First supervisor	Second supervisor	MGK coordinator

This supervision agreement is in accordance with the recommendations of the German Research Foundation (DFG-Preprint 1.90 – 10/19).

Guidelines for Safeguarding Good Scientific Practice, Avoiding Scientific Misconduct and Dealing with Violations

- English Version -

From 5 March 2014

adopted by a decision of the Rectorate from 25 February 2014 after consultation with the Senate

Please note:
Only the German version of these guidelines is legally binding.
The English version is for information purposes only.

Overview of Contents

§ 21 Coming into force

Technische Universität Dresden has agreed the following guidelines, taking into account the recommendations passed by the German Research Foundation (DFG) for safeguarding good scientific practice in the current version of 3rd July 2013.

Preamble

Scientific work rests on fundamental principles that apply to all scientific disciplines. The guiding principle is truthfulness to oneself and others. It is both ethical standard and foundation for the rules of scientific professionalism that apply to the individual disciplines.

All members and employees of TU Dresden shall be bound to make these guidelines to safeguard good scientific practice the basis of their scientific work and to contribute actively to avoiding scientific misconduct in their sphere of responsibility. All reasonable grounds for suspecting scientific misconduct within the University shall be investigated with the utmost attention while respecting the rights of those involved. If the suspicion is confirmed, measures appropriate to the individual case shall be taken.

Part I. Good Scientific Practice

§ 1 Fundamental principles of good scientific practice

In particular, good scientific practice includes the following fundamental principles:

- working in accordance with the recognised rules of the discipline ("lege artis"),
- documenting results so that they are comprehensible, verifiable and complete,
- consistently and critically questioning all results,
- maintaining strict integrity with regard to contributions from collaboration partners, colleagues, competitors and predecessors, and
- maintaining ethical standards when carrying out surveys and studies.

§ 2 Co-operation and management responsibilities in working groups

(1) Every head of a working group shall conduct themselves in an exemplary manner with regard to their scientific work, and bears the responsibility for organising matters in a way that management tasks, supervision, conflict resolution and quality assurance are clearly assigned, and that guarantees that these are indeed carried out.

(2) In working groups, co-operation shall be conducted in an atmosphere conducive to reliability and trust where

- the results obtained through the division of labour can be mutually discussed, criticised and integrated into a common level of knowledge,
- ideas, hypotheses and theories are reciprocally verified and discussed and
- the quality assurance of one's own work and of results is safeguarded.

(3) The support necessary for this shall be provided by the Rectorate to those responsible. Appropriate measures for training courses and continuing education shall be carried out by the Rectorate, or if this appears expedient, by the Schools.

§ 3 Supervision of junior researchers

(1) The supervision of junior researchers by the academic staff of the University shall be carried out in such a way that junior researchers are made aware of the rules of good scientific practice in teaching, training and research, both as a scientific and as an ethical fundamental principle.

(2) For this purpose, it must be ensured that in every teaching and research unit, there is a contact person who is able to communicate the principles for safeguarding good scientific practice, and to contribute to avoiding any misconduct by members.

(3) The application for acceptance as a doctoral candidate shall be made to the Faculty at the beginning of the dissertation project. A binding supervision agreement regarding the form and scope of the supervision is to be signed promptly with all doctoral candidates. The duty of care for junior researchers includes promoting the completion of the work within an appropriate period of time. The supervision concept should also contain measures to support the candidate's future career planning.

(4) The supervision of doctoral candidates shall be organised in such a way that the supervisor has an overview of ongoing research activities and the significant stages of development of the work.

(5) The supervisor's dissertation assessment report shall contain, among other things, statements concerning compliance with the guidelines for good scientific practice and, in the case of the experimental and empirical parts of a dissertation, statements on the quality of the data and how it was obtained.

§ 4 Performance and evaluation criteria

(1) Originality and quality are always to be given priority over quantity in terms of performance and as evaluation criteria for exams, awarding academic degrees, promotion, recruitment, professorial appointments and allocating funds.

(2) Regarding applications for academic appointments, a maximum number of publications for evaluating scientific merit can be specified**.**

§ 5 Safeguarding and storing primary data

(1) Primary data as the basis of publications is to be kept securely for ten years on durable storage media in the teaching and research units of its origin. Measurement results, collections, surveys, cell cultures, material samples, archaeological finds, questionnaires, audio and film recordings are also considered to be primary data.

(2) As a rule, primary data must remain accessible for ten years. For data that cannot be stored securely on durable media, shorter storage periods can be specified in justified cases. Generally, the original data and documents remain at the place of origin; however, duplicates can be made or access rights determined.

(3) The responsibility for the creation of data carriers lies with the respective scientist, on whom the burden of proof rests for the proper recording of the data.

(4) In the absence of any specification at the Schools level, the individual teaching and research units specify what is to be regarded as primary data. Moreover, they establish binding rules concerning the record and storage of primary data, as well as the access to the original data and data carriers; they also make provisions for the event that the scientist

responsible for the origin of the data changes his/her place of work. Moreover, they can specify shorter storage periods in accordance with paragraph 2, sentence 2.

(5) If the primary data contains personal data – details of personal or material circumstances of an identified or identifiable natural person –, then the features enabling that person to be traced are to be stored separately; the features are to be deleted as soon as the research purpose allows. Accordingly, this data shall be removed from the primary data to be archived.

§ 6 Scientific publications

(1) Only those who have made a significant contribution to designing studies or experiments, to carrying out the research project, to developing, analysing and interpreting the data or to the phrasing of the manuscript itself and have consented to its publication may be referred to as authors of a scientific publication.

(2) Co-authorship is not established by:

- acquiring funding,
- providing standard investigating materials,
- instructing colleagues in standard methods,
- only technical participation in data collection,
- technical support only (e.g. merely providing equipment, laboratory animals),
- merely allowing the use of data,
- merely reading the manuscript without making a substantial contribution to the contents, or
- leading the department or working group in which the publication has originated.

Equally, work relations between the participants are immaterial for the justification of co-authorship. A so-called "honorary authorship" is also excluded.

(3) It is an infringement of the rules of good scientific practice to end the collaboration on a publication without due cause, or as co-author upon whose consent the publication depends, to prevent the publication of the results without good cause. Refusal to publish must be justified with verifiable criticism of data, methods or results.

(4) Publications which are intended as reports on new scientific results must describe the methods and results in a verifiable manner – where applicable, with reference to additional literature.

(5) In scientific publications, significant findings which support results and hypotheses, but also any which contradict these, must be disclosed. Preliminary work of one's own and of others, and relevant publications of other authors upon which the work builds directly must be named completely and correctly.

(6) Should the publication be intended to contain traceable personal data – details of personal or material circumstances of an identified or identifiable natural person –, then this is only permitted if those affected have given their explicit consent or if it is essential for the presentation of research results on events of contemporary history and if the person’s overriding interests worthy of protection do not constitute an obstacle to this.

§ 7 Commitment to and information about the guidelines for good scientific practice

(1) All those involved in scientific activities at the University, junior researchers and all students shall commit themselves to comply with the guidelines for good scientific practice pursuant to §§ 1 to 6.

(2) This commitment shall occur either through a commitment to the "Kodex guten wissenschaftlichen Arbeitens für Studierende" (code of good academic work for students) of TU Dresden or through the written assurance that these guidelines have been taken note of.

(3) Among employees, the commitment shall occur immediately upon recruitment. Junior researchers shall commit themselves to these guidelines at the earliest possible time after starting their doctorate or habilitation, and students at the time of enrolment.

(4) The guidelines for good scientific practice are to be integrated as a binding component into academic teaching and into the training of junior researchers.

(5) The university commits itself to creating and developing continually the necessary organisational and personnel structures for safeguarding good scientific practice and preventing scientific misconduct.

(6) On this basis, the Schools are called upon to develop principles of scientific work specific to each discipline and to make these known in a suitable manner.

Part II. Scientific Misconduct

§ 8 Establishing scientific misconduct

Scientific misconduct is deemed to have occurred if, in a scientific context, intentionally or with gross negligence, ethical standards are violated, false information is submitted, the intellectual property of others is violated or their research activity otherwise impeded. The particular circumstances of each individual case are crucial, taking into account the respective disciplinary cultures.

§ 9 Forms of scientific misconduct

A case of scientific misconduct is to be considered particularly in the following situations

(1)

- providing incorrect information regarding authorship (ghost-writing),
- fabricating data,
- falsifying data and sources, e.g. the incomplete use of data and sources, disregarding undesired results without disclosing this, as well as manipulating sources, representations and images,
- provision of incorrect information in a letter of application for employment or in an application for funding (including inaccurate information relating to forms of publication and to publications presently in the process of being printed,
- providing incorrect information regarding the scientific achievements of candidates in selection committees and review panels;

(2) in cases of violation infringement of intellectual property relating to another person's work protected by copyright, or to major scientific insights, hypotheses, theories or research approaches of others by

- the unauthorised use under the pretence of authorship (plagiarism),
- the exploitation of research approaches and ideas of another, in particular as reviewer (theft of ideas),
- pretending scientific authorship or co-authorship,
- the falsification of contents
- the unauthorised publication or the unauthorised provision of access to third parties before the work, insight, hypothesis, theory or research approach have been published,
- assuming (co-)authorship with another without their permission,
- arbitrary delay of the publication of a scientific work, in particular as editor, reviewer or co-author;

(3) in cases of impairment of the research activity of others by

a) sabotaging the research projects of others, for example by

- damaging, destroying or manipulating literature, archive and source material, designs of experiments, equipment, documents, hardware, software, chemicals or other objects that another person needs for carrying out a research project,
- moving or stealing books, archive materials, manuscripts, sets of data,
- rendering relevant information media such as books, documents or other data scientifically unusable ;

b) disposing of primary data, inasmuch as this violates legal regulations or principles of scientific work recognised in the specific field;

c) expressing an incorrect suspicion of scientific misconduct in public.

§10 Co-responsibility for scientific misconduct

A co-responsibility for misconduct can result from, among other things, active participation in the misconduct of others, complicity in the falsification by others, co-authorship while knowing of falsified publications, as well as gross negligence with regard to duties of supervision.

Part III. Committees and Representatives

§ 11 Arbiter (Ombudsperson)

(1) Following the recommendation of the Rectorate, an arbiter (ombudsperson), and a deputy shall be appointed by the Senate. The deputy takes the place of the ombudsperson if he or she is prevented from being present, or in case of bias. The appointment of the ombudsperson and their deputy is for a period of three years. Reappointment is possible.

(2) Persons of proven personal integrity are to be selected for these offices. They shall perform this function independently. To avoid conflicts of interest, no one holding a leading position shall be selected for this function.

(3) The ombudsperson is contact partner, advisor and mediator in all cases of suspected scientific misconduct. If required, they shall be supported by the investigating body for dealing with scientific misconduct.

(4) The ombudsperson shall submit an annual report on their activities to the Senate. This can contain recommendations for dealing with scientific misconduct.

Part IV. Procedure in Cases of Suspected Scientific Misconduct

§ 12 Investigation committee

(1) The Rectorate shall, in consultation with the Senate, set up an investigation committee to resolve cases of scientific misconduct. This committee shall consist of a chairperson as well as four further members. The Rectorate shall appoint the chairperson as well as the other members of the investigation committee for a period of three years; reappointment is possible. The chairperson should not be a member of TU Dresden and should preferably be qualified to hold judicial office. The additional members of the investigation committee must be members or employees of TU Dresden and come from various disciplines.

(2) The investigation committee can at any time call on the advice of persons who have special expertise in the scientific area to be evaluated or who have relevant experience in dealing with similar proceedings. It shall be supported by the investigation body for dealing with scientific misconduct when this is required.

(3) Meetings of the investigation committee are not public and are strictly confidential. The decisions of the investigation committee shall be taken by simple majority vote, unless provided otherwise. The investigation committee reaches its decisions based on the ascertained facts and the evidence it has gathered, and according to its own independent conviction.

§13 Regular Examination Boards

(1) If the suspected misconduct affects academic examinations (e.g. Bachelor, Master and Diploma examinations) or post-graduate degrees (doctoral degrees and habilitations), then the committee specified by the respective examination or graduation regulations (Prüfungs- oder Graduierungsordnung) is responsible for the investigation ("regular examination committee").

(2) A regular examination committee can hand over a case to the investigation committee or call on its expertise in processing a case. The investigation committee may decide at any time that it wishes to deal with a case itself.

(3) As long as the investigation committee is processing a case, this prevents other bodies from becoming active in the same matter.

§ 14 Investigating body for dealing with scientific misconduct

(1) The TU Dresden is setting up an investigating body for dealing with scientific misconduct, which can be called upon for support in cases of substantiated suspicion. This includes technical services for detecting plagiarism.

(2) In suspected cases, it shall support the work of the ombudsperson, the investigation committee and the regular examination committee.

(3) The investigating body for dealing with scientific misconduct shall support all members of the academic teaching staff in preventing scientific misconduct, carry out training and make a contribution to sensitising for scientific probity.

Part IV. Procedure in cases of suspected scientific misconduct

§ 15 Suspected cases and reporting suspected cases

(1) If scientific misconduct is suspected, members of the TU Dresden shall contact the ombudsperson. External persons can also contact him/her, provided that the suspected cases involve scientists at TU Dresden.

(2) Every charge must be made in "good faith" that the accusation is correct.

3) If the suspicion of scientific misconduct is reported to a body other than the ombudsperson, then the latter is to be informed. If this body is not a regular examination committee which will itself investigate the suspicion, then the reported suspicion is to be forwarded to the ombudsperson.

(4) The suspicion shall be reported in writing and the report shall disclose the incriminating facts and evidence. In the case of an oral report, a written note is to be made regarding the suspicion, and the supporting facts and evidence. The ombudsperson can also take up reported suspected cases if this occurs without revealing the identity of the complainant. The prerequisite for this is that the accusations are sufficiently credible.

(5) The ombudsperson, while ensuring that the legitimate interests of the person affected are protected, shall gather the information and statements necessary for establishing the facts, and in individual cases, also consult experts.

(6) If from the ombudsperson´s point of view there are grounds for suspecting scientific misconduct, then the investigation committee can inform the responsible regular examination committee about the facts. If from the ombudsperson´s point of view , a serious case of scientific misconduct is suspected, he or she must inform the investigation committee or the responsible regular examination committee.

§ 16 Assisting and protecting parties involved in the procedure

(1) The person affected shall be informed of the incriminating facts and, where applicable, evidence, together with the request that he/she make a statement, insofar as establishing the facts is not jeopardised by this. The time allowed for making a statement is generally four weeks. The complainant and the person affected shall be instructed about their rights and obligations and also about the possible consequences of not fulfilling these obligations.

(2) No disadvantages must arise for the continuation of their own scientific and professional progress for persons who supply palpable evidence of a suspicion of scientific misconduct (whistleblowers). The ombudsperson, the investigation body for dealing with scientific misconduct, the investigation committee and the regular examination committees must provide them with appropriate protection. To this end, the ombudsperson and also the members of the afore-mentioned committees are obliged to maintain confidentiality about the identity of the persons who turned to them with the palpable evidence for the suspicion of scientific misconduct, as well as about circumstances which might lead to the identity of the reporter. This is not applicable if this person has released them from their obligation to confidentiality.

(3) Charges shall be treated as confidential by all those involved. Confidentiality serves to protect the whistleblower and the person against whom the suspicion is raised. Before the investigation of a suspicion is concluded, prejudging the person affected is to be strictly avoided.

(4) The person affected, the complainant and the ombudsperson shall be informed about the decision of the particular committee. At the same time, the main reasons leading to the decision are also to be communicated.

(5) At the end of an investigation, care must be taken that persons who were innocently involved in processes of scientific misconduct suffer no further damage with regard to their personal and academic integrity. Suitable measures can be consultation by the ombudsperson or a written, and where appropriate, public statement from the University that no scientific misconduct is to be attributed to the person affected.

§ 17 Preliminary investigation

(1) As soon as the investigation committee or a regular examination committee learns of specific reasons to suspect scientific misconduct, proceedings shall be initiated or the case handed over to the ombudsperson in compliance with the principles of § 16.

(2) All incriminatory and exonerating facts and evidence shall be documented in writing.

(3) On receipt of the statement of the person affected, and following the end of the deadline according to § 16 (1), the investigation committee or the regular examination committee shall decide within four weeks whether the investigation procedure - after communication of the reasons to the persons affected and the complainants - shall be concluded because the suspicion has not been confirmed, or whether a formal investigation shall be instigated.

(4) If the complainant disagrees with the termination of the procedure, they then have two weeks in which they can raise their objections in writing or orally to the investigation committee or to the regular examination committee. The investigation committee or the regular examination committee shall consult and decide on the objections in compliance with ownership and property rights pursuant to § 16.

§ 18 Formal investigation procedure

(1) The opening of the formal investigation procedure shall be communicated to the Rector and the ombudsperson by the chair of the investigation committee or the regular examination committee.

(2) The investigation committee or the regular examination committee shall document the proceedings and write a report about the result of the investigation, containing the underlying reasons for the result.

(3) The main reasons are to be communicated in writing to the person affected, the complainant and the ombudsperson before the conclusion of the procedure. These can then make a statement on the report. If the investigation committee or the regular examination committee deems misconduct to have been proved, the report, including the statements and documents, shall be presented to the Rector. In these cases, the report shall also contain a recommendation on how to proceed further, in particular regarding possible academic repercussions for the person affected. The Rector shall also forward the documents, if appropriate, to the responsible authority, and this authority or the Rector shall take appropriate action. In other cases, the procedure shall be terminated.

(4) The Rector can request a new investigation of the results in justified cases.

§ 19 Duration of the overall process and obligation to keep records

(1) Generally, the overall process should not last longer than six months.

(2) The records of the investigation procedure are to be kept for 30 years.

Part V. Possible decisions and sanctions in cases of scientific misconduct

§ 20 Measures to be taken in cases of scientific misconduct

As every case of scientific misconduct is different, and the seriousness of the scientific misconduct also plays a central role in each decision, there are no uniform guidelines for adequate individual consequences. The decision concerning measures to be taken for scientific misconduct is determined by the circumstances of the individual case. The following measures can be taken into consideration:

(1) In less serious cases, a reprimand or an exemplary reprimand can be issued.

(2) Consequences under employment law can be, in particular, a warning, an extraordinary notice of dismissal, contractual notice of dismissal, termination of a contract or removal from one's post.

(3) Consequences under civil law can be, in particular, issuing a ban on entering the premises, legal rights to recover possession vis-à-vis the persons affected, for example, with regard to misappropriated scientific material, claims for removal and for injunctive relief arising from copyright law, personal rights, patent and competition law, claims to repayment (for example of scholarships, third-party funds or similar) or claims for damages by the University.

(4) Academic consequences may have to be initiated on various levels and with different objectives.

- Internal university level: revocation of the academic degree if it has been awarded on the basis of falsified publications or obtained otherwise maliciously, or revocation of the right to teach at the University.
- Non-university scientific institutions and associations: such institutions are in any event to be informed about scientific misconduct if they are directly affected by this, or if the scientist concerned holds a leading position, or, as in the case of funding organisations, participates in decision-making bodies.
- Withdrawal of scientific publications.

(5) Consequences under criminal law are to be considered if it is suspected that scientific misconduct at the same time constitutes an offence in terms of the criminal code or other criminal provisions, or a misdemeanour, such as, in particular, copyright infringements, (including falsification of technical drawings), criminal damage (including changing data), offences against property and assets (as in the case of theft, fraudulent acquisition of funding or embezzlement), violation of personal details or private matters (such as through data espionage or use of another person's secrets), injury to life or physical injury (for example to test persons as a consequence of false data).

(6) Whether and to what extent charges are to be brought by the University in such a case is reserved for the due consideration of the Rector.

(7) The relevant applicable provisions of the different examination and doctoral degree regulations remain unaffected by this.

§ 21 Coming into force/expiry

These guidelines come into force after the publication in the official announcements of Technische Universität Dresden. At the same time, the "Principles for Good Scientific Practice at Technische Universität Dresden and Regulations for Dealing with Scientific Misconduct" from 12 January 2000, last altered on 6 March 2011, cease to be in force.

Dresden, 5 March 2014

Prof. Dr.-Ing. habil. DEng/Auckland
Hans Müller-Steinhagen

Rector of Technische Universität Dresden