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**UNIVERSITÄT
BERN**

Institute of
Plant Sciences

Welcome to the Institute

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This document will be handed over
to all new members of the Institute
of Plant Sciences.

1 Introduction

On behalf of the Institute of Plant Sciences I would like to welcome you and wish you a pleasant and successful time at our Institute.

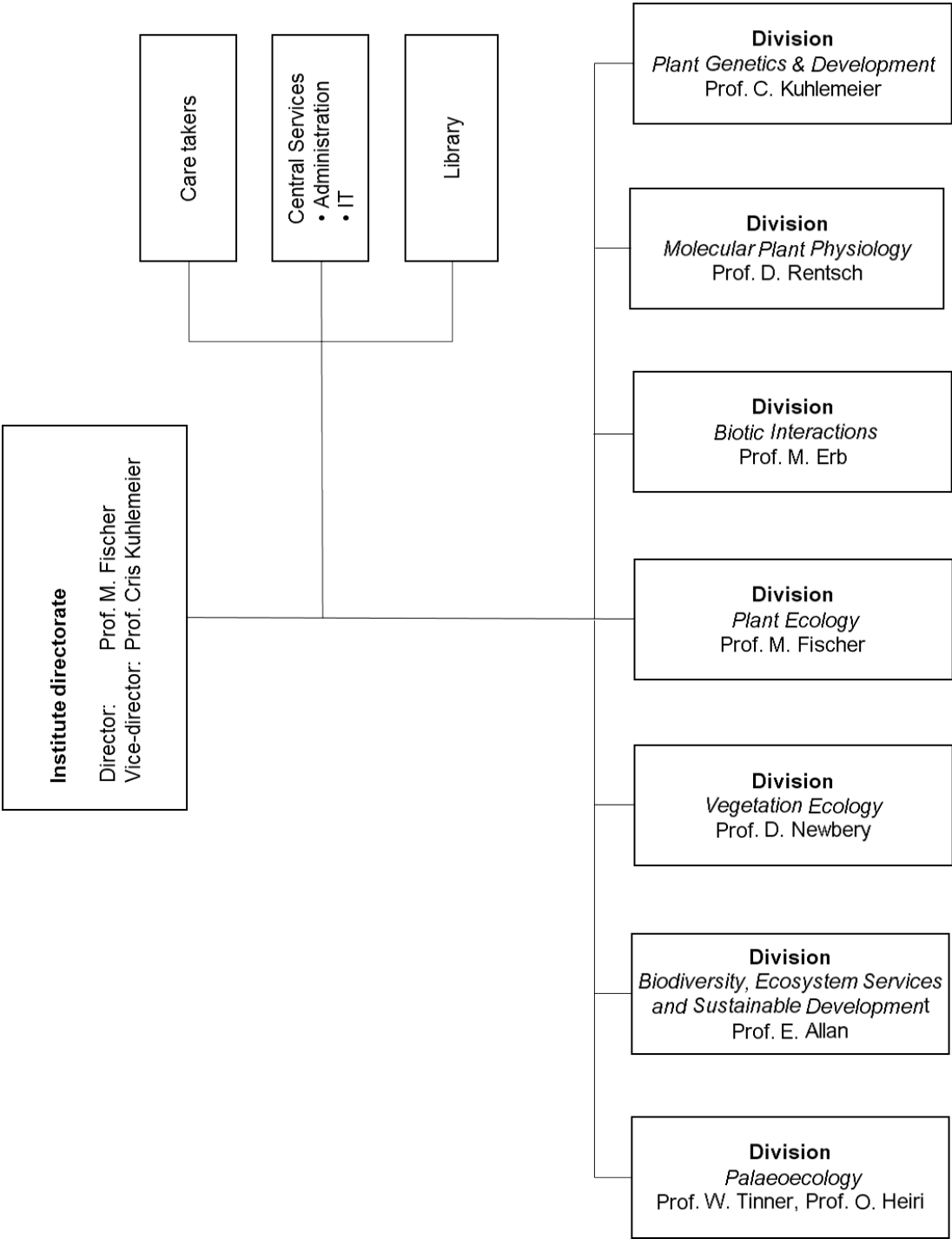
The purpose of this document is to assist you in safe work practices and to list contact persons and sources of additional information. Important information regarding the University in general¹⁾, the Science Faculty²⁾, and the Department of Biology³⁾ can be found on the internet. Our aim is to protect you as well as the other members of staff, your research, equipment and facilities, and the environment.

If you have any suggestions on how procedures or working conditions could be improved or if questions or problems arise, we ask you to contact your direct supervisor. General suggestions can also be put on the agenda for the next institute conference.

Current director of the IPS
Markus Fischer

- 1) Homepage University of Bern:
www.unibe.ch
Legal foundations of the University of Bern:
www.rechtsdienst.unibe.ch
- 2) Science Faculty:
www.philnat.unibe.ch
- 3) Department of Biology:
www.biology.unibe.ch

2 Organization flow chart (2015)



3 Environmental issues

3.1 *Saving energy*

- The lighting should be on only when light is needed.
- If new electrical equipment is purchased, instruments with low energy consumption are preferred.
- Open all windows fully for a short period. Always close the windows over night. Bottom hung windows should not be used during the heating period.
- If you leave offices, lecture halls or other rooms, make sure the PC(s), beamer(s), microscope(s) and other electrical equipment is switched off. Apart from saving energy this prolongs the equipment's lifespan.
- When leaving the institute, make sure the lighting in the corridors, toilettes and in the entrance area is shut off.
- Fridges and cold rooms (-20°C, -80°C) should be opened only for short periods.
- Fridges and freezers should be defrosted twice a year (defrost and clean them at the same time). Ice-free equipment provides better cooling performance and uses less energy.

3.2 *Use of chemical substances*

- The use of hazardous chemical substances should be kept as low as possible.
- Hazardous substances are to be replaced with harmless ones wherever possible.

3.3 *Environmental friendly working*

- Use recycled paper whenever possible. At the IPS at least 5 m³ (approx. 5 tonnes!) of paper is used per year for photocopies.
- Come to work by bike or public transport. It's cheap and good for your health.

3.4 *Disposal*

- **Glass and paper for recycling** is collect in the respective containers next to the "Birrlilus".
- **Aluminum** waste should be deposited under the stairs to the first floor of the "Birrlilus".
- **Used batteries** should be deposited in the box provided in the workshop.
- Please return **used toner cartridges** in their cardboard boxes to Peter von Ballmoos.
- **Chemical substances** are collected in the room behind the workshop and should be handed over personally to the technical staff in charge.

Willi Tanner

4 Laboratory safety

Safety officers:

Section Paleoeology
Section Plant Ecology
Section Vegetation Ecology
Section Plant Development
Section Biotic Interactions
Section Molecular Plant Physiology

Erika Gobet
Judith Hinderling
Marlise Zimmermann
Therese Mandel
Iwona Anders
Marianne Suter Grotemeyer

For general questions
regarding lab safety:

Willi Tanner, building superintendent,
Tel. 4946
Urs Zehnder, risk management (Fachstelle Risikomanagement), University of Bern,
Tel. 5550

Be aware: safety cannot be delegated and is ultimately your own responsibility. If you are not sure, ask! We recommend newcomers to attend a laboratory safety course.

Please consider:

- Safety issues should already be considered during the planning of experiments. Do not start lab work without thorough knowledge of the hazards involved.
- Consumption of food and beverages is not permitted in the lab.
- Clearly label all materials and reagents.
- Use personal protection such as lab coat, goggles, gloves, chemical hood, whenever required. Consider the safety of your neighbors at the bench.
- Properly store flammable materials. **Never** store them in regular refrigerators, but only in the specially designated **explosion-proof refrigerators**.
- Equipment should be regularly checked for safety.
- Check positions of escapes, fire alarms, fire extinguishers, emergency showers, first aid and eye wash stations when you first come to the lab. Important telephone numbers can be found next to the telephones (fire department, medical emergency, Tox-Zentrum).
- Strictly follow the instructions of the safety officers and discuss potential hazards with them.
- In case of emergency: **stay calm**. As a first priority ensure the safety of the persons in the lab. Subsequently, inform safety officers, protect equipment and data.
- Report all accidents to the safety officers. They will enter them in the Institute safety log.
- Alert and instruct people in case of unsafe behavior.
- All safety-relevant incidents must be reported to the safety officer of your section.

Cris Kuhlemeier

5 Radiation safety – internal directives

These internal directives regulate the handling of radioactive materials at the Institute of Plant Sciences (IPS). They are based on the Radiological Protection Act (RPA¹) and the Radiological Protection Ordinance (RPO²), which prevail. The department for Risk Management of the University³ informs in detail about radiation safety (in German only).

The radiation protection expert (RPE) of the institute has the formal authority to enforce the following measures that are associated with the RPE-function:

- Instruction of new employees.
- Fulfilment of the requirements of the licensing authority (FOPH)
- Monitoring compliance with internal and generally applicable radiation protection regulations. Check the radiation protection compliant behaviour.
- Create a local safety concept (internal directives) and adjust internal directives to new circumstances.
- Ensuring the proper disposal of radioactive waste.

Any defects or unusual events in relation to radioactive substances must be reported immediately to the RPE.

5.1 Ordering and Storage of Radioactive Materials

Before ordering radioactive substances for a new experiment, inform the RPE. Orders must be recorded in the dedicated notebook, with the isotope, activity, date and name of the ordering person. Radioactive sources should be stored in a way that they are only accessible to persons who are authorised for their use. Open a new data sheet for substrates when adding labelled compounds (H-3 / C-14) to the stock. The amount of every removal must be listed in this sheet. It is important to always know the amounts of radioactive substances in storage and in waste.

Excerpt of some of the isotopes permitted⁴ at the IPS and of their limits

Nuclide	Exemption limit (LE ²)	Authorisation limit (LA ²)	Radioactivity limits in work at the IPS ⁴	Storage limits for the IPS ⁴
H-3	0.2 MBq	100 MBq	50 MBq	500 MBq
C-14	0.02 MBq	9 MBq	50 MBq	500 MBq
S-35	0.01 MBq	40 MBq	50 MBq	500 MBq
P-32	0.004 MBq	2 MBq	20 MBq	100 MBq
P-33	0.04 MBq	4 MBq	100 MBq	200 MBq

¹ RPA (www.admin.ch/ch/e/rs/814_50)

² RPO (www.admin.ch/ch/e/rs/814_501)

³ www.risiko.unibe.ch/content/umweltsicherheit/strahlenschutz

⁴ According to the "Bewilligung für den Umgang mit ionisierender Strahlung" dating from July 2, 2008 (BE 0322.06.001)

5.2 ALARA

Each experiment with ionising radiation should be planned according to the ALARA principle (as low as reasonably achievable). The aim is to minimize the risk of radioactive exposure while keeping in mind that some exposure may be acceptable to do the job satisfactorily.

The following issues must be considered:

- The nuclide must be in the list of the permitted isotopes at the IPS
- Acquire only the required activity
- Specify the type (solid / liquid)
- Calculate the amount of waste

Radioactive materials should be handled in a way that as little radioactive waste as possible is generated.

5.3 Authorisation and Working Principles

Working in the C-lab (in the basement) is exclusively restricted to eligible persons. Those persons are authorised to work in the C-lab only after instruction by the RSE. The list of eligible persons is attached to the door to the C-laboratory. This list also contains the names and telephone numbers of the RSE and his substitute in case of an emergency.

Experiments must be performed in the C-laboratory, if the applied radioactivity is above the authorisation limit (LA). Before starting to work in the C-lab, the experimenting person has to give a signature together with the date of the experiment. A dedicated notebook is placed at the entry of the C-lab. Experiments below the authorisation limit (LA) should be performed in a normal laboratory (exception P-32).

5.4 Working with Ionising Radiation

Whenever working with ionising radiation, handle carefully and separate radioactive waste from other waste properly.

Before starting to work, the equipment, protective clothing and work area must be checked for contamination. Lab coat, goggles and latex gloves are mandatory for all the work with open radioactive sources in the C-lab.

Working with P-32 requires a Plexiglas® screen to protect the body from the β -emission. Working with γ -emitting nuclides (e.g. Cd-109) requires an appropriate shielding (e.g. lead).

At the end of work, the equipment, protective clothing and work area must be checked again for contamination. This applies especially to all material that will be removed from the controlled area. Check possible contamination with a β - and γ -monitor (e.g. Berthold) and clean up. Check your hands before leaving the C-lab.

5.5 Emergency - Stop, Think, Act

In case of emergency, try to stay calm and prevent spreading. First, check your hands, then the body (face, shoes and lab coats) with the β - and γ -monitor (e.g. Berthold). In the case of a body contamination try to remove the radioactive material as well as possible (change gloves and wash hands and flush the eyes if necessary, take off the lab coat). Check shoes and hands again before leaving the C-lab.

Dab clear liquids with absorbent paper (such as Kleenex), do not smudge. A contamination with P-32 is removed by exchange with a saturated phosphate solution, Cd-109 with a calcium solution. For all other isotopes (C-14, H-3 and S-35) basically water and soap are suitable.

Control the decontamination process with the β - and γ -monitor (e.g. Berthold). Perform a wipe test for a H-3 contamination and measure with the scintillation counter. Repeat cleaning until complete decontamination is achieved. In case a complete decontamination cannot be achieved, mark the workplace clearly visible, indicating the isotope and activity of the contamination and your name. Regardless of the degree of contamination, immediately notify the RSE, his deputy or the group leader in written form.

5.6 **Radioactive Waste**

Section 3.6 of the disposal policy⁵ of the University of Bern regulates the disposal of radioactive substances. For the IPS the following additional rules apply: For book keeping, the RPE must be informed about each container that is brought into the storing room for radioactive waste and before any final disposal. If you are in doubt about the proper disposal, consult the RPE.

At the end of the work in the C-lab, liquid and solid wastes have to be collected, removed from the bench, and each isotope stored separately in the C-lab. Labelled probes and radioactive samples for storage at -4°C or -20° C, have to be labelled with the name of the isotope, the activity, the user name and the date. If necessary, they have to be protected for β - or γ -emission with Plexiglas® or lead, respectively.

For the management of H-3 and C-14 solid wastes, a list is attached to the waste containers. Each user has to write his name, the date and the activity (in Bq) of the added waste. Do not dispose radioactivity warning signs with radioactive waste.

When full, liquid and solid wastes stored in the C-lab have to be transferred to the dedicated storage room (opposite building). The containers have to be labelled as radioactive waste including isotope, activity, your name and the date. Only for H-3 and C-14, solid and liquid waste weight or volume must be specified in addition.

Waste with short half-life may be stored until the activity has fallen below LE (according to the RPO, annex 3). Then it is considered as inactive and may be disposed accordingly. Prior to final disposal all radioactivity warning signs must be removed or made illegible.

Longer-lived isotopes are packed in a way that the activity per container does not exceed 100 LE, if possible. We are allowed to dispose 100 LE per month with the normal waste (according to the RPO, annex 2). Prior to final disposal all the radioactivity warning sign must be removed or made illegible.

The radiation safety expert has to be notified in advance before disposing of any radioactive waste.

Radiation safety expert: Peter von Ballmoos

E-Mail: Peter.vonBallmoos@ips.unibe.ch

Tel. +41 (0)31 631 35 46 / 49 60

⁵ www.risiko.unibe.ch/unibe/verwaltungsdirektion/risiko/content/e4409/e5026/files5027/Entsorgungsrichtlinie_UniBe_ZeU_V_1.0_100421.pdf

6 Biosafety regulations for handling genetically modified, pathogenic or invasive organisms

6.1 Legal bases

The biosafety regulations of the Institute of Plant Sciences rely essentially on the following legal bases:

www.bafu.admin.ch/biotechnologie

CO: Ordinance on the contained use of organisms

=ESV: Verordnung vom 9. Mai 2012 über den Umgang mit Organismen in geschlossenen Systemen (Einschliessungsverordnung, ESV) (SR 814.912) (Stand am 1. Juni 2012)

OOSB: Ordinance on the occupational safety in biotechnology

= SAMV: Verordnung vom 25. August 1999 über den Schutz der Arbeitnehmerinnen und Arbeitnehmer vor Gefährdung durch Mikroorganismen (SR 832.321) (Stand am 1. Juni 2012)

In addition:

GTL: Federal law relating to non-human gene technology

= GTG: Bundesgesetz vom 21. März 2003 über die Gentechnik im Ausserhumanbereich (Gentechnikgesetz) (SR 814.91) (Stand am 1. Juni 2014).

RO: Ordinance on the release of organisms into the environment

= FrSV: Verordnung vom 10. September 2008 über den Umgang mit Organismen in der Umwelt (Freisetzungsverordnung, FrSV) (SR 814.911) (Stand am 1. Juni 2012)

CartO: Ordinance on the transboundary movement of genetically modified organisms

= CartV: Verordnung vom 3. November 2004 über den grenzüberschreitenden Verkehr mit gentechnisch veränderten Organismen (Cartagena-Verordnung, CartV) (SR 814.912.21) (Stand am 1. Juni 2012)

The regulations listed below are a practical guidance for working with genetically modified organisms, pathogenic and invasive at the IPS and have to be followed by everybody working at the institute. However, the regulations mentioned above are legally binding. A more detailed description (in German) can be found at:

www.risiko.unibe.ch/content/umweltsicherheit/biologische_sicherheit

6.2 General safety regulations at the IPS

- Handling of genetically modified, pathogenic or invasive organisms at the IPS must take place in contained systems (field trials etc. require special authorizations, see RO).
- Anyone involved in the contained use of organisms must take all due care to ensure that organisms, their metabolic and waste products do not endanger people or the environment (Art. 4 CO and RO).
- Anyone who wishes to carry out activities with genetically modified organisms must carry out a risk assessment in advance. This leads to classification of organisms into groups and activities into classes (level 1 to 4 each, with level 1 presenting no or a negligible risk to people and the environment).

- Each new organism must be evaluated for its risk to people and the environment and assigned to a group. Each new activity must be assigned to a class. The risk has to be evaluated again, if the activity changes substantially or if important new findings are available.
- All activity in class 1 that uses genetically modified organisms for the first time must be notified. The project leader is responsible for submitting this notification to the Coordination Centre for Biotechnology.
- Information about activities and organisms used in the experiments must be recorded (e.g. lab books, database on constructs etc). These records must be stored for five years after the activity ceased. On request these records have to be made available to the authorities.
- Activities of class 1 are allowed in the following areas of the IPS:
 - Laboratories of the group of M. Erb
 - Laboratories of the group of M. Fischer
 - Laboratories of the group of C. Kuhlemeier
 - Laboratories of the group of D. Rentsch
 - Student laboratories
 - Greenhouse under the roof, room 49
 - Greenhouse of the botanical garden, house 3
 - C-Lab
 - Growth rooms
 - Growth chambers
 - Cold rooms
- Work with *Diabrotica virgifera virgifera*, *Diabrotica balteata* and *Diabrotica undecimpunctata* at containment levels S2 and S3 can be performed in room -123. For any other S2 and S3 insect species, separate permits need to be obtained from the BAFU and the Kanton Bern (S3 only). Room -123 is restricted to authorized personnel. Access to the room can be obtained upon request and appropriate instructions (Contact: Prof. M. Erb).

6.3 **Safety measures for handling genetically modified micro-organisms**

(Adherence to basic rules of good microbiological practice)

- Entrance to the labs is only permitted for instructed persons.
- A lab journal is obligatory.
- The waste has to be disposed according to the regulations (see below).
- Pipetting by the use of mouth suction is forbidden (use pipetting device).
- Syringe needles should only be used when absolutely necessary and have to be disposed appropriately.
- The production of aerosols should be minimized.
- Eating, drinking, smoking, applying make-up and to storing food in the labs is prohibited.
- Wash hands before leaving the lab.
- Special clothing for the lab has to be worn.
- The laboratory should be kept clean and tidy.

Waste:

- All waste that contains or is contaminated with genetically modified organisms must be inactivated before disposal. Similarly, equipment and containers contaminated with genetically modified organisms have to be disinfected before recycling. This is preferentially done by autoclaving.
- Mixed wastes: For contaminated biological waste with chemical and/or radioactive risks there are no general rules. The greatest possible danger has to be considered. In general, autoclaving is forbidden. (Information on safe disposal of mixed waste can be obtained from the biological safety officer).

Transport:

- Transport between the different areas of the institute has to take place in closed, shatter-proofed containers.
- For transport within Switzerland and abroad the national and international regulations for labelling and packaging must be followed (see CartO).
- Detailed and useful information about transporting pathogenic or genetically modified organisms can be found on the homepage of the SECB (Swiss Expert Committee for Biosafety):

www.efbs.admin.ch/index.php?id=146&L=3

6.4 **Special regulations for experiments with transgenic plants**

- Experiments with cell cultures or sterile young plants are performed essentially as described under experiments with microorganisms.
- In addition, for all transgenic plants a datasheet has to be completed indicating the genetic modification (e.g. construct) and including the different lines that are available as well as their fate. This information has to be stored in the respective groups in a central folder.
- (Transgenic) plants must always be labelled unequivocally.
- No seed shedding of (transgenic) plants! Please remove flowers and siliques or collect seed in tight containers (e.g. AraCon or paper bags).
- If necessary, the gardeners are taking measures against pests and bugs.
- Genetically modified organisms may not be released into the environment.

Disposal:

- Arabidopsis, petunia, tobacco: transgenic lines (including soil), inactivate by autoclaving. Contact Christopher Ball or Jasmin Sekulovski (gardeners)
- Tomatoes: above ground shoot, i.e. flowers and fruits of the transgenic plants as well as vegetative parts have to be removed and autoclaved before disposal, roots and soil are composted separately, after steaming by >90 °C (ask gardeners).

6.5 **Other biological hazards**

- IPS performs research on various organisms that pose non-negligible potential hazards. Even when such organisms are not subjected to the strict regulations for GMOs, common sense dictates that they should be treated with due care. Remember: it is easy to release a living organism into the environment, it may be impossible to retrieve it.

Contacts

- Herbivores: Prof. Matthias Erb.
- Invasive plants: Prof. Markus Fischer. Explicitly listed as forbidden are *Ambrosia artemisiifolia*, *Crassula helmsii*, *Elodea nuttalli*, *Heracleum mantegazzianum*, *Hydrocotyle ranunculoides*, *Impatiens glandulifera*, *Ludwigia* spp. (*L. grandiflora*, *L. peploides*), *Reynoutria* spp. (*Fallopia* spp., *Polygonum polystachyum*, *P. cuspidatum*), *Rhus typhina*, *Senecio inaequidens*, *Solidago* spp. (*S. canadensis*, *S. gigantea*, *S. nemoralis*; without *S. virgaurea*).

Biosafety officer: Cris Kuhlemeier

Substitute: Doris Rentsch

7 Dealing with toxic substances

Inappropriate handling of toxic substances can be severely harmful to your health and that of your colleagues. Consideration should also be given toward nature and the environment when using toxic substances.

See also: www.risiko.unibe.ch/content/umweltsicherheit/chemikaliensicherheit

You are therefore required to strictly follow these guidelines:

1. Always read the safety data sheets provided by the manufacturer/distributor (www.eusdb.de/en). Pay close attention to the hazard labels and follow recommended handling instructions. A list of hazard labels can be found in most chemical catalogs:
www.risiko.unibe.ch/content/umweltsicherheit/chemikaliensicherheit
or
IPSShared\Safety\AGU\Merkblatt_Gefahrensymbol_GS_GHS_090317.pdf
2. Familiarize yourself with emergency procedures and locate the first aid station BEFOREHAND. Do not handle poisons unless you KNOW the risks involved.
3. Eating and drinking is not permitted while handling poisons. Wash hands thoroughly afterwards.
4. Properly label all containers including for temporary storage.
5. Always use the smallest possible amount. Pay special attention to keeping balances clean!
6. IPS is committed to reducing the use of toxic substances. Note that the potent mutagen/carcinogen ethidium bromide is presently being phased out and replaced by SybrSafe. However, it may still be used for certain applications. Before using it, contact Marianne Suter Grottemeyer.
7. Poisonous waste is to be disposed of immediately and in an environmentally correct fashion (Information: Chemical waste collection unit, Dept Chemistry and Biochemistry, Tel. 4260).
8. Before ordering, check within the Institute. There is a good chance that the substance is already available.
9. In case of accident: STAY CALM. Inform all persons in your vicinity and your lab head.
10. All accidents must be reported to the safety officer (see page 6) of your section of the Institute. They keep records in order to improve safety procedures. Serious incidents will also be reported to the risk management (Fachstelle Risikomanagement) of the university

Cris Kuhlemeier

Substitute: Doris Rentsch

8 Coordinator of the studies in Plant Sciences (Studienkoordinator)

Biology-Students study according to the rules described in the *Reglement über das Studium und die Leistungskontrollen an der Philosophisch-naturwissenschaftlichen Fakultät (Studienreglement Phil.-nat. Fakultät, RSL Phil.-nat.)*, dated April 14, 2005. The actual curricula ("Studienpläne") for the BSc and the MSc studies in the Department of Biology are based on this "Reglement" (RSL05) and are written in German. The RSL05 (with alterations: July 2008 and March 2014) and the curricula ("Studienpläne") together with the current appendices are available electronically under the following web address:

www.biology.unibe.ch/content/students/studienleitung

The BSc in Biology is possible with three alternative majors (Plant Sciences, Cell Biology and Ecology and Evolution) and is regulated in the "*Studienplan zum Bachelorstudium in Biologie*". The first two years of the curriculum are identical for all students, while the third year is focussed on the major. The first two years are coordinated by the "Studienleitung Biologie". For the third year, students contact first the "Studienkoordinator" of the IPS (at the moment: Willy Tinner). The *Studienplan zum Bachelorstudium in Biologie* (bachelor degree course schedule) and the corresponding appendix are also available electronically via the link mentioned above, or can be obtained from the Studienkoordination (course coordinators).

Based on a Bachelor diploma, the Institute of Plant Sciences offers the possibility to enter one of alternative Master programs (see also: www.biology.unibe.ch/content/students/master). Depending on the courses included in the BSc, the MSc programs require some additional courses ("Zusatzleistungen"). The details are listed in the curricula ("Masterstudienpläne" together with the appendices). The MSc programs are:

- MSc in *Molecular Life Sciences*
- MSc in *Ecology and Evolution*
- MSc in *Bioinformatics & Computational Biology*
- MSc in *Climate Sciences*
- MSc in *Biomedical Engineering*

The details concerning the curricula and the exams are regulated in the appropriate "Studienplan". It is recommended to contact the "Studienkoordinator" of the respective MSc program in an early phase of planning in order to optimize the studies to one of the programs.

Willy Tinner

9 Master theses and PhD theses at the IPS

The basic regulations for a Master thesis or a PhD thesis can be found in the *Reglement über das Studium und die Leistungskontrollen an der Philosophisch-naturwissenschaftlichen Fakultät* (RSL) and in the appropriate "Studienplan" for the Master and PhD studies (see also chapter 8). The master's thesis, or the dissertation, has to be registered before being started. The registration and selection processes are listed on the website of the respective course MSc programs.

9.1 Master thesis

All students from the IPS participating in a MSc program, complete a Master thesis under the supervision of a person with the appropriate permission according to the RSL. The requirements to start the work for the MSc thesis, the duration and the submission are specified in the RSL and in the "Studienplan". In general, students working on a MSc thesis are not appointed for a paid position. Exceptionally, an appointment as "Hilfsassistent(in)" with a small percentage and for a limited time is possible for contributions to the teaching program or for special duties outside the work of the MSc thesis. The appointment of PhD students has, in the same section, a higher priority than the appointment of MSc students. The participation in seminars colloquia or special lecture series during the MSc thesis is part of the program and obligatory (at least fulfilling the minimal requirements according to the "Studienplan"). Additional requirements are stated in the "Studienplan".

9.2 PhD thesis

The PhD thesis represents an original research work under the supervision of a person with the appropriate permission according to the actual rules of the Faculty of Sciences. The results should be published in highly ranked international scientific journals with high impact. PhD students are encouraged to collaborate with other scientists from our institute and from other institutions. In accordance with the supervisor, PhD students should participate in scientific meetings during their thesis and present a poster or an oral contribution. The supervisor provides financial support within the possibilities of the budget. Scientific societies in Switzerland (e.g. "Schweizerische Botanische Gesellschaft", "Schweizerische Gesellschaft für Pflanzenbauwissenschaften") may contribute, after an appropriate application, financially to the participation of PhD student members at a congress. The active participation of PhD students in seminars, colloquia and special lecture series at the IPS is expected and is, according to the "Studienplan", obligatory to a minimal extent.

PhD students participate, during their thesis, in accordance with the supervisor in courses or seminars - e.g. of the Swiss Plant Science Web and of other organizations (including interdisciplinary meetings). These participations are valid as working time as long as they are related to Plant Sciences and must be agreed with the supervisor.

A PhD thesis lasts in general 3 years for full-time students and is embedded in a larger project. PhD students are usually appointed according to the rules of the Swiss National Science Foundation. For full-time PhD students appointed via the budget of the Kanton Bern, a "Hilfsassistentz" of at least 50% should be envisaged during the thesis. The contracts are made by the "Verwaltungsdirektion der Universität". General rules (e.g. concerning holidays, scientific absences, maternity leave) are available via the internet at: www.pers.unibe.ch/content/stichwortverzeichnis

At the PhD student level, the wide range of plant biology is reflected by the participation in following graduate programs:

- PhD in *Molecular Life Sciences*
- PhD in *Ecology and Evolution*
- PhD in *Cellular and Biomedical Sciences* at the Graduate School for Cellular and Biomedical Sciences
- PhD in *Climate Sciences* at the Graduate School of Climate Sciences

It is expected from all PhD students, regardless of the financial source for their project, to contribute in an adequate manner to teaching and infrastructure duties. It should be possible that PhD students can work on their thesis on average, over each semester, at least 50% of the time available.

Willy Tinner

10 Library

Library specific information can be found at: www.ub.unibe.ch/libips

10.1 Access rights

All members of the IPS, the Botanical Garden and matriculated University students have the right to use the library. All other persons may have access on request.

10.2 Opening hours - daily attendance

The door of the library building is open from Monday to Friday 7:30 am to 5:30 pm.

On Saturdays and Sundays and holidays, the door is locked and can be opened with a badge.

Attendance of staff from Monday until Friday 8:30 – 12 am, and on Monday, Tuesday and Thursday from 2 – 5 pm.

At other times please contact by email: ips@ub.unibe.ch
christine.dolder@ub.unibe.ch
peter.vonballmoos@ub.unibe.ch

10.3 Acquisition of documents

The library staff finds literature that is not easily obtainable and advises on the acquisition of online literature. Please contact one of the e-mail addresses mentioned above.

Orders via www.nebis.ch and swissbib.ch may be handled individually. Each section has its own code and a password. Please specify your own email address under comments, so that the incoming document can be forwarded to you.

Before ordering via NEBIS, check whether the requested journal can be accessed online (e-journal list: www.ub.unibe.ch/ejournals), or whether it is present in our library. The IDS Basel-Bern catalogue is available at: baselbern.swissbib.ch, Meta search interface of the Swiss university libraries: swissbib.ch

10.4 Lending

The IPS library is intended to be an **academic reference library**. **Neither book nor journal should be taken out of the area of the Institute and Botanical Garden.** They can be used in the rooms of the library and in the offices and labs of the Institute as well.

In order to have all the literature available to all users at all times, each loan requires a note (dedicated plastic pockets are provided near all shelves). Personal responsibility and thoughtfulness are expected.

Loan periods

- for **books 4 weeks**
In extraordinary cases, the loan period can be extended after consultation with the library staff (PhD thesis, master thesis, lecture, etc.)
- for **journals 3 days** maximum at the working place at the IPS. The current volume of a journal cannot be borrowed. Use the copy machine on the 1st floor instead.
- **Reference books, textbooks and bibliographies** in the grey bookshelves in front of the Compactus in the ground floor **cannot be borrowed**. Please respect all labels "Keine Ausleihe" or "Nicht entleihbar" which stand for "No Borrowing".

10.5 Sites

In the **office of the library personnel** (ground floor to the left) you can find the helpdesk and get information on:

- searching literature databases and using library programs (literature searches, inter-library loans, procurement of journal articles),
- ordering journal articles and other scientific literature,
- finding online articles,
- all matters concerning scientific literature

This is also the place where you can find:

- the current volumes of subscribed journals and book series of the IPS, arranged alphabetically according to the title. Please respect that there is no borrowing of these volumes allowed. Use the copy machine instead.
- a video conference system for use by appointment with the library personnel, preferably on Wednesday afternoon.
- a seminar room for up to 12 participants. Preferably available on Wednesday afternoons. Use only after consultation with the library staff. The technical staff and secretariat handle reservation of this room.

In the **room on the ground floor** to the right with the compactus and reading places you can find:

- newly bought books
- a WYSE client for searches in library databases. Log in using the library account of the university library or - for students only - with the campus account
- about 10 reading desks reserved for students from the 1st to 4th semesters, some of them equipped with drawers, and
- the compactus with all current periodicals of the IPS and the long-term loans from the University Library – all in alphabetical order
- the compactus with books of the IPS - please refer to the laid out lists entitled "Klassifikation" to find the exact location of books with the shelf mark you are looking for
- the metal shelves in front of the compactus with reference works, textbooks, bibliographical references. Attention: "Nicht entleihbar" stands for "No Borrowing"
- precise instructions on the lending procedures and lending forms
- several card indices with our holdings until 1989 – also accessible online
baselbern.swissbib.ch

In the **room on the first floor** to the right, with the shelves and reading places, you can find:

- books of the IPS
- reading desks reserved for students from the 5th and 6th semester, some of them equipped with drawers, and
- precise instructions on the lending procedures and lending forms

In the **old compactus** in the ground floor of the right wing of the building near the bridge, you can find:

- old stocks (cancelled subscriptions of the former Institute of Geobotany)
- collections from the University Library with long-term loan
- books with the shelf marks ANT/ANT Q (shelf-locked: access with the help from the library personnel)
- reprint collection of the palaeo ecology group
- “Lang” collection
- the “Fuchs” collection with the shelf mark IPS F ...

Book collection of the Botanical Garten

- collection of floras and garden related literature
- diverse shelf marks, marked in the online catalogue with: *Bern UB Pflanzenwissenschaft., Gartenbibliothek. Sign.: IPS ...*
- access with the help from the library personnel

Further books belonging to the groups are placed in offices and laboratories

Your library is happy to help you. Please do not hesitate to contact us under ips@ub.unibe.ch or personally in our office.

Christine Dolder
Peter von Ballmoos

11 Administration

11.1 Notice of Absence

- **For all absences** (vacation, sick leave, business-related leave, military service) longer than 1/2 day, please turn in a **yellow absence form** ("Abwesenheitsmeldezettel"). These forms can be found in the tray next to the old telephone booth, across from the mail boxes.
- **No oral notes, please!** However, if you are sick, please call in at your earliest convenience and turn in a yellow absence form as soon as you are well and back at work. It is needed to process your absence.
- There are two reasons for these requirements. First, it enables us to competently provide information on the whereabouts of our employees. Second, we are required by the University administration to keep track of the absences of our employees and to allow them inspection at any time.
- Absences also has to be recorded electronically (see chapter 11.4)

11.2 Employment

Responsible: Helga Rodriguez

If you are employed by IPS for the first time, please report to Helga Rodriguez, and bring with you your social security card ("AHV-Ausweis"), as well as the account number of your bank account or your post account.

11.3 Workspace

If you are new at the IPS, regardless of whether you are internal or external staff, please stop by both secretariat offices and introduce yourself. Also, please indicate:

- in which department you are working and where your office space is located
- what your telephone number and email address is

Please also give your new, direct phone number to your colleagues and friends.

11.4 Time- and absences-recording

Administrative and technical personnel record their hours worked with the designated form. The form shall be signed by your supervisor by the end of each month and turned in at the secretariat office subsequently.

All staff members who do not record their working time, i.e. lecturers, senior assistants, assistants and PhD students are obliged to record their absences electronically. Template spreadsheet tables for recording of absences are available under: www.pers.unibe.ch/content/arbeitsverhaeltnis/waehrend_der_anstellung/arbeitszeit/arbeitszeiterfassung

This tools do not excuse you from notifying the office administration (for more details see *chapter 11.1*).

11.5 Ordering / Purchasing

For administrative VAT (Value Added Tax) reasons, it is important that the university or institute is mentioned above the name of the recipient in the invoice address. Please indicate to the company you are ordering from that you would like your name to be noted on the invoice and on the delivery note.

11.6 Office Material

Responsible: Yvonne Omara

Stationeries (letter paper, envelopes, writing pads, binders, etc.) can be found in the middle closet in the hallway near the stairs.

Other basic office materials can be obtained from the office of Yvonne Omara.

Material that is available from neither the self-serve closet nor the secretariat (i.e. computer supplies) has to be ordered and paid directly for by each section.

Toner and ink for the printers is purchased centrally through the IT- services of the IPS and can be replaced by yourself.

11.7 Bookkeeping / Invoices

Responsible: Helga Rodriguez

As soon as you receive your goods, please bring your invoice to the secretariat.

11.8 Travel Expenses

Responsible: Helga Rodriguez

Reimbursements must be approved by your department head. For processing we need:

- detailed information about the destination, time, and reason of travel
- a detailed list of the individual expenses (transportation, meals, accommodation), including original receipts, if possible.

Further information and the expense form (Spesenabrechnung) which has to be completed can be found under “Bewirtschaftung – Beschaffung – Bezahlen” on the finance department’s intranet site:

www.fin.unibe.ch/intranet/content/gut_zu_wissen/formulare_und_merkblaetter

11.9 University Administration

All information regarding University Administration (Zentrale Dienste) can be found online at www.unibe.ch/organisation/dienste

For example:

- **Finances**

Especially print and copy centre, for ordering printed matter:
www.fin.unibe.ch/content/kopierzentrale

- **Gender Equality**

www.gleichstellung.unibe.ch

- **Human Resources**

All information regarding human resources (e.g. employment, working hours, vacation, sickness and accident regulations, military service, civil defense service, legal matters, index etc.) can be found online at www.pers.unibe.ch.

Ordering forms at www.pers.unibe.ch/content/formulare

- **Legal Service**

e.g. law collection: www.rechtsdienst.unibe.ch/content

- **Sexual harassment in the workplace**

Sexual harassment in the workplace violates the personal rights and dignity. It obstructs effort to create equal opportunities and can seriously compromise the affected persons’ performance and endanger their employment. Sexual harassment can lead to psychological and physical disorders.

If you are being harassed at work you are entitled to free counseling and support. The counseling is confidential and you will not be obliged to take further action. For counseling please refer to the official contact at the Personalamt (personel department), Phone: **044 787 73 71**. Further information under:

www.pers.unibe.ch/content/beratung/sexuelle_belaestigung

- **University Sport**

Courses and programs also for University employees: www.sport.unibe.ch

- **Welcome Center**

The Welcome Center gives advice and information for mobile researchers and new staff in every-day questions about Bern and helps with the planning of their relocation before and after arriving in Switzerland. It also establishes contacts with university and external services. On the Welcome Center's website there is information on living in Bern and German language courses for beginners (www.int.unibe.ch/content/welcome).

Helga Rodriguez

12 Information Technology (IT)

12.1 General

The *Directive on the Use of the IT Resources at the University of Bern with amendments* and the *Regierungsratsbeschluss: Weisungen für den Umgang mit Passwörtern* have priority. They can be found under:

www.rechtsdienst.unibe.ch/content/rechtssammlung/informatik

Excerpts:

Directive on the use of the IT resources, Art. 3: In principle, the IT resources may be used only in order to carry out University work. The use of the IT resources by members of staff for private purposes is only permitted outside working hours and subject to compliance with this directive.

Directive on the handling of passwords, Art. 1: Passwords are private. They must not be told to any other person. One single password for a group of users is not allowed.

12.2 IT at the IPS

For useful and up to date information see: www.ips.unibe.ch/content/working/it

12.2.1 Owner of Data, Data Security, Data Deserving Protection

Data, which are acquired in the course of an employment at the IPS are owned by the university and the canton of Bern. They must be available for the IPS even after the ending of an employment. For this purpose, such data are stored by the scientist on a server of the University of Bern. After the ending of the employment, they are archived by the IT-responsible of the IPS.

Sensitive personal data, according to the Federal Act on Data Protection (FADP), are:

- religious, ideological, political or trade union-related views or activities or the racial origin,
- health, the intimate sphere, the physical and mental constitution
- social security measures or welfare aid,
- administrative or criminal proceedings and sanctions.

Sensitive data must be handled with special attention with regard to saving and communicating. An inventory about the saving and editing of sensitive data must be established. If such data are found, a procedure for data protection must be developed. This procedure defines the safety measures.

Possible safety measures are:

- restrictive access rights on the storage device,
- encryption for saving and transport of the data,
- restricted access to rooms with volumes containing sensitive data.

Encryption is particularly needed when sending sensitive data by email or when such files are saved on a server. Each author is responsible for the safety of files he or she creates.

12.2.2 Each section chooses a **person responsible for IT**

He or she has the following duties:

- acquiring PCs and peripherals as well as consumables and cables in arrangement with the head of the section and the IT-responsible of the IPS;
- acquiring, installing and controlling software and licences in arrangement with the head of the section and the IT-responsible of the IPS;
- maintaining PCs and their peripherals;
- consulting the IT-responsible of the IPS about problems they could not solve themselves; and
- acting as contact of the IT-responsible of the IPS.

12.2.3 The **IT-responsible of the IPS**

- help with the acquisition and installation of consumables, new hardware, software and licenses;
- act as contact of the IT-responsible of the IT Services Department (Informatikdienste, ID) of the university.
- gather information, material, data storage media and software licenses and circulates them at the IPS in a suitable manner;
- support users by putting software and hardware into operation;
- support users with debugging and repairs, under the assistance of the suppliers;
- look after the equipment that serves the whole Institute, especially the computer network, servers, networked printers, PCs in lecture halls and the computer pool;
- manage campus accounts (e-mail), website addresses, wired and wireless network connection in collaboration with the ID;
- plan the IT infrastructure of the IPS and security measures in agreement with the director of the Institute and with the ID;
- create and maintain regular backups of data stored on servers of the IPS, and
- create and maintain the website of the IPS.

12.2.4 Rules for the use of the computer lab in the library

Opening hours for guests without a key or a badge: Monday until Friday (except holidays) 7:30 am – 5:30 pm

- In general, access is restricted to persons with a campus account at the University of Bern or with an account in the pool domain. These accounts can be used to log on to the PCs.
- The room is intended to be a quiet working place. Avoid all disturbing activities. No eating or drinking, except bottled water.
- After use, switch off PCs and remove all personal belongings.
- Limit print jobs to the minimum. Especially do not print lecture notes. For print jobs that are not directly related to studying or work at the Institute a fee of 20 Rp. per printed page has to be paid. Use the cash box near the copy machine.

The computer pool is open for the following tasks in decreasing priority:

1. Lessons of a lecture series of the IPS;
2. Exercises of a lecture series;
3. Maintenance (software, hardware installation);
4. Scientific duties as part of a job at the IPS; and
5. Practising the use of the installed software, and for on-line searches.

Not allowed for users of the computer pool in particular are:

1. Installing programs or running software from an external volume
2. Jobs with commercial purposes, and
3. Downloading or uploading data for private use
(e.g. programs, music, pictures, films...)

For security reasons all internet traffic of PCs in the computer pool is logged by equipment of the ID.

Peter von Ballmoos

Roman Köpfli

13 House rules

13.1 Opening hours

The main building (incl. the library) are open:

Mon - Fri	07:30 am – 5.30 pm (except holidays)
Sat + Sun	closed

The area of the botanical garden:

07:00 am – 5:30 pm (summer + winter)

Outside the opening hours all entrances are locked. When locked, the buildings can be left via the main entrances and the gardens via the north exit, but cannot be entered again without key/batch.

If events take place in the **evening**, the main entrance at the lecture hall is open half an hour before the beginning of the event. The garden gates will remain open a quarter of an hour after the event. If events take place on Saturday and Sunday, the organisers of these events are responsible for opening the doors shortly before the event. They are also responsible for locking the doors once the guests are in the building and after the guests have left the event.

Office-, lab-, building-, and garden doors are to be locked outside the opening hours. Please make sure that windows and doors on the ground floor are open only when you are present.

13.2 Institute keys

The technical staff is responsible for the procurement, the hand-over and the withdrawal of keys and badges.

13.3 Behaviour in case of fire

As per internal instructions of the technical staff.

13.4 Parking

There are a limited number of parking spaces available for employees/associates of the IPS. To use these, a vignette is necessary. This vignette can be requested from the department "Betrieb + Technik" of the university:
www.bt.unibe.ch/content/dienstleistungen/parkplaetze_fahrzeuge/aussenparkplaetze.
Vehicles of visitors and commercial vehicles are to be stationed on the spaces depicted as such.

13.5 *Lost and found*

Objects lost and found are kept by the technical staff for half a year.

13.6 *Notice boards*

Notice boards are located on the ground floor at the main entrances.

13.7 *Reservation of rooms*

You can check the lecture room reservation at IPS in Outlook calendar. Though the booking has to be done through secretariat or caretaker.

The technical staff is responsible for the setup and/or installation of booked equipment as well as the setup of the video system. This equipment is to be operated only by the technical staff or the lecturers.

The tables in the seminar room 80 can be arranged as needed. Reservations for non-university use of rooms are to be directed to the secretariat or technical staff. The secretariat will charge for this kind of use in accordance with the guidelines of the university.

13.8 *Damaged equipment and theft*

Please immediately report damaged equipment and stolen objects to the technical staff or the heads of departments.

13.9 *Additional points*

- Door to door sales are not permitted at the IPS.
- Bringing along pets is not allowed at the IPS (exception: guide dogs)

Willi Tanner

14 Institute cars

14.1 Prerequisites for use of the cars

- The driver must have a valid driver's licence.
- He or she must be a university employee.

14.2 Instructions

- In order to achieve permission to drive with one of the institute cars, every person must arrange a **test ride** with either Willi Tanner or Martin Tschanz (with or without trailer).
- **Defects** or **damages** are to be reported to Willi Tanner or Martin Tschanz before and after use (car body, headlights, oil, tires). Damages not reported will be claimed from the last user.
- The **driven kilometres** are to be registered in the log book (to be found in the glove locker).
- The car is to be returned in a **clean condition** (inside and outside) and the fuel tank is to be at least $\frac{3}{4}$ full. Please clean the windscreen also.
- **Fuelling**
Use the MIGROL-card to pay for the fuel. The pin-number for the card can be found in the log book. Please take always the receipt with you. The MIGROL-card is valid in Switzerland only.
- **Smoking is not allowed in institute cars.**
- The **car keys** and the **schedule for reservations** are available in the workshop.
- **Private trips**
Private trips with institute cars are not allowed.

Willi Tanner

15 Important telephone numbers

Name	Tel. (ext. 031 631-...)	Mail / web / others
Allan Eric	4992	eric.allan@ips.unibe.ch
Ambulance	144	
Anders Iwona	8814	iwona.anders@ips.unibe.ch
BAFU ¹⁾	031 323 55 99	contact.biotech@bafu.admin.ch
Caretaker	4946 / 4948	
Chemical waste disposal	4260	
City emergency center	031 326 20 00	www.citynotfall.ch
Dolder Christine	8022	christine.dolder@ub.unibe.ch
Emergency numbers (general)		www.bern.ch/notfaelle
Erb Matthias	8668	matthias.erb@ips.unibe.ch
Fire alarm cancellation	031 321 16 22	(Anlage Nr. 221 408)
Fire department	118	
Fischer Markus	4943	markus.fischer@ips.unibe.ch
Gobet Erika	4931	erika.gobet@ips.unibe.ch
Hospital (Insel) emergency room	031 632 24 02	www.notfallzentrum.insel.ch
Kuhlemeier Cris	4913	cris.kuhlemeier@ips.unibe.ch
Library	8022	ips@ub.unibe.ch
Mandel Therese	3772 / 4954	therese.mandel@ips.unibe.ch
Medical emergency number	0900 576 747	
Newbery David	8815	david.newbery@ips.unibe.ch
Omara Yvonne	4912	yvonne.omara@ips.unibe.ch
Police	117	
Radiation safety expert	3546 / 4960	peter.vonballmoos@ips.unibe.ch
Rentsch Doris	4916	doris.rentsch@ips.unibe.ch
Research gardeners	4920 / 079 770 42 26	
Risk management ²⁾	5555	www.risiko.unibe.ch/content/krisenmanagement
Rodriguez Helga	4911	helga.rodriquez@ips.unibe.ch
Secretariat	4911	helga.rodriquez@ips.unibe.ch
Suter Grottemeyer Marianne	4918	marianne.suter@ips.unibe.ch
Tanner Willi, bldg. superindendant	4946	willi.tanner@ips.unibe.ch
Tinner Willy	4932	willy.tinner@ips.unibe.ch
Tox-Centre ³⁾	145	www.toxinfo.ch
University administration	031 631 81 11	www.unibe.ch
von Ballmoos Peter	3546 / 4960	peter.vonballmoos@ips.unibe.ch
Zehnder Urs, Risikomanagement	5550	urs.zehnder@bt.unibe.ch
Zimmermann Marlise	4934	marlise.zimmermann@ips.unibe.ch

¹⁾ Bundesamt für Umwelt, Kontaktstelle Biotechnologie des Bundes (Federal office for the environment)

²⁾ Crisis team of the University of Bern

³⁾ Tox Info Suisse, Swiss Toxicological Information Centre

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