



# ANNUAL REPORT [compact]



2018

**ANNUAL REPORT** [compact]  
SCIENCE IN THE SERVICE OF HUMANITY

## Foreword



*Prof. Dr. Dr. Andreas Hensel, President*



*Prof. Dr. Reiner Wittkowski, Vice-President*

Dear Readers,

Especially in the age of many truths, the BfR is characterised by its independent research and fact-based risk assessment. But how can science stand its ground in the face of fake news, alternative facts and allegations of fabrication? At the BfR Stakeholder Conference in November 2018, prominent speakers from science, politics, the media and NGOs discussed scientific facts and perceived truths. An important criterion for reinforcing trust in scientific institutions is transparency. Without it, successful risk communication is not possible. The BfR therefore called for more openness and transparency during the hearing of the Special Committee on the European Union's authorisation procedure for pesticides (PEST) in May 2018.

The range of independent, application-oriented research is apparent from the diverse third-party funded projects successfully procured. With the research on key topics of the BfR, junior research groups were also established and new structures achieved within our institute. Since the BfR is engaging more and more employees, existing units were restructured in new groups at the end of 2018 and additional units established. Three study centres were also formed: MEAL/Total Diet Study, genome sequencing and analysis as well as One Health concepts. From antiperspirants with aluminium to toothpaste with zinc salts – the BfR acknowledged the work of the Cosmetics Commission on the occasion of its 50<sup>th</sup> anniversary with a scientific symposium. The BfR Academy 2018 also designed and organised numerous other scientific events to encourage dialogue and provide information as well as trainings for key stakeholders. The BfR is once more certified as a family-friendly employer by berufundfamilie Service GmbH, and was successfully re-audited in 2018. In addition, the BfR mentoring programme to promote women in leadership roles in particular was launched.

Besides an outline of selected events and the latest developments in the areas of research, human resources and training, this annual report offers a concise overview on the facts, figures and publications of the BfR. Anyone with an interest in the current themes of the individual BfR departments can read all about them in the science magazine BfR2GO. Through our work, we are setting scientific standards in the field of consumer health protection. The success is mainly attributable to all our employees, to whom we express our warmest thanks for their dedication and commitment.

Prof. Dr. Dr. Andreas Hensel,  
President

Prof. Dr. Reiner Wittkowski,  
Vice-President

# Contents

04

## ABOUT THE BfR



04

## About the BfR

Objectives and missions  
Executive Board and departments  
Principles and working procedures

14

## Research

18

## Personnel and training

22

## Key data

26

## Opinions

28

## Events

32

## Third-party funded projects

42

## Publications in scientific journals

54

## Organisation chart

14

## RESEARCH



18

## PERSONNEL AND TRAINING



The results of our work  
promote a factual and  
social discourse.

# About the BfR



# Objectives and missions

The German Federal Institute for Risk Assessment (BfR) is a scientifically independent institution within the portfolio of the Federal Ministry of Food and Agriculture (BMEL). It advises the Federal Government on questions of food, chemical and product safety. The BfR conducts its own research on topics that are closely linked to its assessment tasks. With its work, the BfR makes a decisive contribution towards the protection of consumer health.

The BfR was established in 2002 to strengthen consumer health protection. It is the scientific institution in the Federal Republic of Germany which prepares reports and opinions on questions of food and feed safety, as well as on the safety of substances and products. The BfR is tasked with assessing existing and identifying new health risks, preparing recommendations on risk limitation and communicating this process to policy makers and the general public. The BfR also performs the tasks of the “German Centre for the Protection of Laboratory Animals (Bf3R)”.

In its risk assessment, the BfR is advised by a network of scientific experts from committees, as well as the Scientific Advisory Board. As the national Focal Point of the European Food Safety Authority (EFSA) and partner of the European Chemicals Agency (ECHA), the BfR cooperates with more than 51 national, international, governmental and non-governmental institutions.

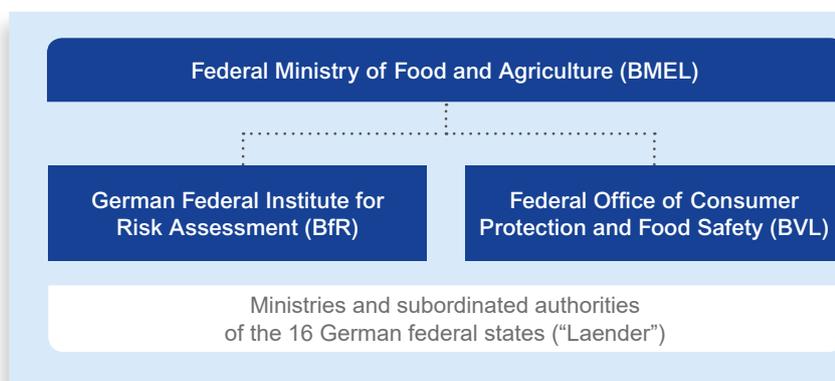
The BfR currently has around 1,000 employees in nine departments at three locations in Berlin. The BfR is independent in its scientific assessments, research and communication activities.

## Position in consumer health protection

The BfR was established as a federal authority with legal capacity within the portfolio of the Federal Ministry of Food and Agriculture. It advises the federal ministries in the drafting of legal regulations. It assesses health risks from a scientific point of view and outlines possible courses of action to mitigate risks. These are converted into protective measures for consumers by management on federal government level.

**i** The detailed legal foundation of the BfR:  
[www.bfr.bund.de/en](http://www.bfr.bund.de/en) > **The Institute** > **Remit**

It is the duty of the competent authorities of the German federal states (“Laender”) to monitor compliance with the national and European regulations on consumer health protection. The BfR supports the German federal states (“Laender”) in this task by developing and establishing analysis methods for monitoring, for example, or giving an advisory opinion on current consumer health protection issues. The BfR is also involved in various registration and approval procedures.



To introduce justified consumer protection measures, the German Federal Institute for Risk Assessment is requested to establish the current state of science. The Federal Office of Consumer Protection and Food Safety and the Federal Ministry of Food and Agriculture are responsible for management tasks.

## Executive Board and departments

“Identifying risks – protecting health” – that is the central task of the BfR. The Institute is headed by its President, Professor Dr. Dr. Andreas Hensel, and his Vice-President, Professor Dr. Reiner Wittkowski. They are supported in their work by several staff units and the nine departments introduced below.

### Administration Department

Head: Michael Gose

Administration is the service provider for all specialised departments in the Institute. It looks after the infrastructure, personnel recruitment, concerns of staff regarding personnel matters, management and control of income and expenditure, as well as fittings and furniture and the organisational and technical maintenance of rooms and Institute grounds. The department issues organisational rules for the Institute and is responsible at the same time for compliance with legal requirements.

### Risk Communication Department

Head: PD Dr. Gaby-Fleur Böhl

The interdisciplinary Risk Communication Department carries out social science research projects on the perception of risks, the early detection of risks and the estimation of their consequences. Another focus is crisis prevention and coordination. The department also encompasses press and public relations work, the BfR Committee system and the BfR Academy. The participatory dialogue with stakeholders from science, economics, politics, the media, associations, non-governmental organisations and consumers is also of great significance.

### Exposure Department

Head: Professor Dr. Matthias Greiner

The department assesses consumer exposure in the fields of food, chemical and product safety and conducts research projects in these areas, including the BfR MEAL study. It provides technical support in areas such as mathematical statistics and modelling. The department performs legally prescribed tasks in the fields of chemical safety, transport of dangerous goods, poisoning and product documentation and good laboratory practice. It is also the service provider for IT maintenance in the BfR.

### Biological Safety Department

Head: Professor Dr. Karsten Nöckler

The department investigates the health risks posed to humans, particularly from microorganisms, the toxins formed by them and other microbial metabolites. Not only foodstuffs are evaluated for their potential as carriers of biological hazards, but also animal feed, cosmetics and commodities (such as food packaging materials, dishes), including the processes by which they are acquired, manufactured, processed and distributed.

### Food Safety Department

Head: Professor Dr. Dr. Alfonso Lampen

The department assesses the risks posed by substances in foods, including natural ingredients, additives and flavourings and contaminants, as well as undesired substances which find their way into food through manufacturing, storage or treatment processes. Nutritional risks are also assessed along with the risks for certain population groups. Experimental projects on the mode of toxicological action, mechanisms of action of oral intake (bioavailability), internal exposure (biomarkers in human studies) and on the molecular mechanisms of action (toxicogenomics) of relevant substances make up an integral part of the assessment.

### Pesticides Safety Department

Head: Dr. Roland Solecki

This department is responsible for the health risk assessment of plant protection products and biocidal products. This involves the assessment of the toxicological properties of active substances in pesticides and their metabolites, their classification and labelling as well as derivation of limit values. After estimating expected exposure, risk assessments are conducted for consumers and persons exposed during application. Additionally, maximum residue levels and methods for monitoring them are evaluated and assessment strategies further developed.

### Chemical and Product Safety Department

Head: Professor Dr. Dr. Andreas Luch

The department assesses the health effects of chemical substances and identifies measures to reduce risks. A further task is to identify, conduct research, assess and prevent health risks that may be associated with consumer products such as cosmetics, tobacco products and commodities (e.g. food packaging, toys, clothing etc.). Experimental projects focusing on the release, exposure and toxicity of migrating chemical substances form an integral part of these assessment activities.

### Safety in the Food Chain Department

Head: Dr. Monika Lahrssen-Wiederholt

The department assesses the health risks resulting from the intake of contaminants and residues from food and feed and quantifies the transfer of undesirable substances from feed along the food chain into food of animal origin. The department also includes the National Reference Laboratory (NRL) for persistent organic pollutants (POP) in food and feed, the NRL for mycotoxins and plant toxins in food and feed, the NRL for marine biotoxins and the NRL for feed additives, as well as the senior expert office for the control of foreign wines. Product identity and the traceability of foods and feeds, as well as the analysis of global commodity flows, are other areas of focus.

### Experimental Toxicology and ZEBET Department

Head: Professor Dr. Gilbert Schönfelder

The department implements the tasks and aims assigned to the BfR in accordance with the German Animal Welfare Act (TierSchG) and of the Regulation on the protection of animals used for experiments or other scientific purposes (TierSchVersV). It administers the "German Centre for the Protection of Laboratory Animals (Bf3R)" and coordinates all activities countrywide with the goal of reducing animal experiments and ensuring the best possible protection for laboratory animals. The department also deals with the (further) development of toxicological test methods and assessment strategies, which includes the chemical programme of the Organisation for Economic Cooperation and Development (OECD).



From left to right: Prof. Dr. Matthias Greiner, Prof. Dr. Dr. Alfonso Lampen, PD Dr. Gaby-Fleur Böl, Dr. Roland Solecki, Prof. Dr. Dr. Andreas Luch, Dr. Monika Lahrssen-Wiederholt, Prof. Dr. Reiner Wittkowski, Michael Gose, Prof. Dr. Karsten Nöckler, Prof. Dr. Dr. Andreas Hensel, Prof. Dr. Gilbert Schönfelder

## Principles and working procedures

The German Federal Institute for Risk Assessment (BfR) prepares expert reports and opinions on questions of food and feed safety, as well as the safety of chemicals and products. By doing so, it makes an important contribution towards refining consumer protection and food safety. The BfR is free of economic, political and social interests in its research, assessments and communication. It provides information in a way that can be easily understood by the general public.

### Impartiality

The impartiality of the experts is a fundamental precondition for guaranteeing independent risk assessments. For this reason, the separation of scientific risk assessment and subsequent risk management was asserted in Europe 15 years ago. To ensure its independence, the BfR does not accept any funding from industry or other interest groups, but is financed solely through federal government funds, and national and international, publicly financed third-party projects.

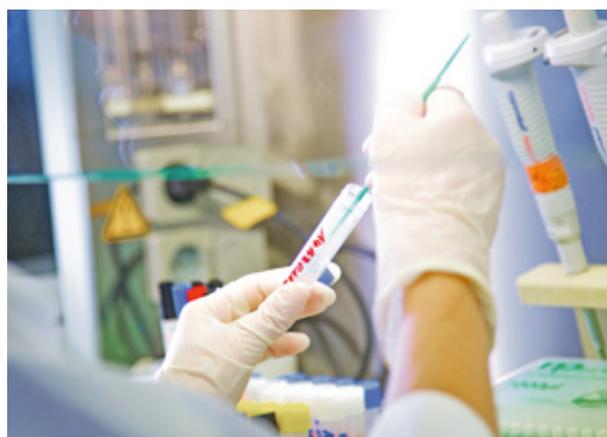
The overall concept of the BfR explicitly provides for exchange with different stakeholders. These include non-governmental organisations, consumer associations, trade and industry, politics, science and the media. The involvement of various stakeholders is of particular importance when scientific positions are represented and justified. The risk assessments themselves, however, are prepared exclusively by BfR employees. External experts merely advise the BfR, they do not make any official decisions. The work results and recommendations of the BfR are used by all interested parties as an important decision-making tool for implementing measures. Statements made by the BfR are orientated on internationally recognised principles and the reasoning behind them is explained in a way that outsiders can understand. Existing knowledge is given due consideration and clearly presented. Relevant scientific opposing views are stated in full.

Transparency is necessary on all levels of risk assessment. The assessment must be clear, understandable and reproducible from the objectives and scope of the opinion through the source, type and evidence of the data on which it is based and must include an explanation of the methods, assumptions, uncertainty and variability it contains, all the way through to the result and conclusions.

### Assessment

The assessment of a risk takes into account the probability of the occurrence of a health hazard and the expected extent of the health impairment. A health risk can never be completely excluded. Using a variety of suitable measures known as risk management, an attempt is made to minimise risks to the greatest possible extent and prevent a health hazard.

It is the task of the BfR to provide the responsible bodies with a sound scientific basis for risk management. The detection of a risk (early risk detection) and its assessment (risk assessment) are the first steps in consumer health protection. Risk management can be guided by this and take appropriate measures.



*Risk assessment is made on the basis of internationally recognised scientific assessment criteria.*

## The BfR is free of economic, political and social interests in its research, assessments and communication.

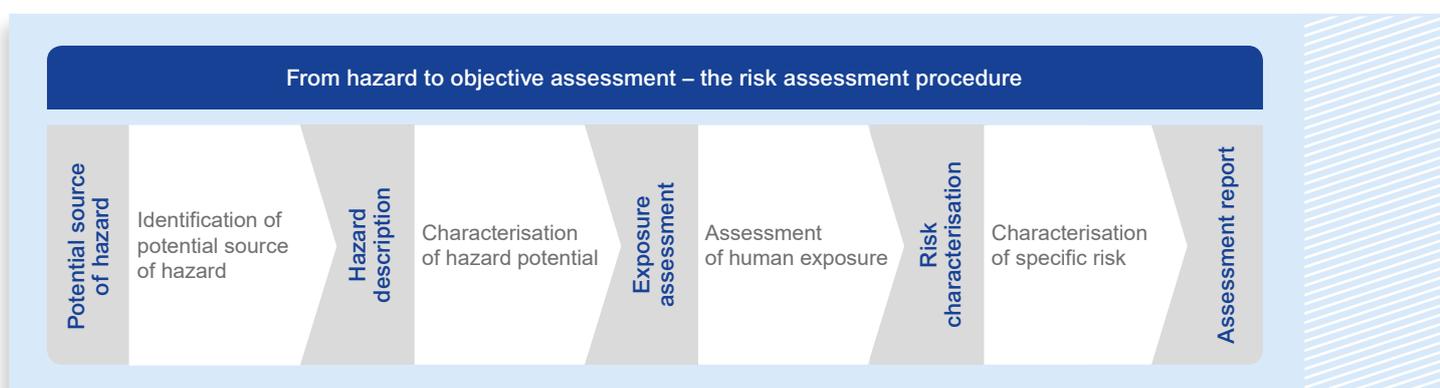
Risk assessment is made on the basis of internationally recognised scientific assessment criteria (see sketch). It comprises the estimation of a risk by means of scientific methods.

A distinction is made between qualitative risk assessment, in which risks are described verbally (following the sketch shown in the box) and quantitative risk assessments. These are at least partly based on calculations or mathematical models in which the risks are described by means of mathematical or statistical methods.

The risk assessments conducted by the BfR also always form part of the Institute's risk communication. The BfR has the legal remit of informing the general public about possible, identified and assessed risks.

The assessments are presented transparently and are comprehensible. The results are made accessible to the general public on the BfR website in compliance with the rules governing the confidentiality of protected data. The Institute maintains a dialogue with representatives from politics, science, consumer associations, trade and industry, non-governmental organisations and the media through expert hearings, scientific conferences and consumer forums.

**i** The BfR has published guidelines for health assessments in the field of consumer protection which formulate the requirements of BfR risk assessments:  
[www.bfr.bund.de/en](http://www.bfr.bund.de/en) > Publications > Brochures > Guidance Document for Health Assessments



## BfR Committees

Fifteen committees of scientific experts advise the BfR on matters concerning safety of foods and feeds, chemicals and products as well as on risk communication. They consolidate the expert knowledge available in Germany on the highest scientific level and can be called upon for advice as an established network in times of crisis.

The members of the committees are external, independent experts who support the work of the BfR in an honorary and advisory capacity. They come from universities and other research institutes, federal government and German federal state ("Land") authorities as well as trade and consumer associations.

The BfR Committees are made up of at least ten members who elect the respective chairperson from among their ranks. The BfR provides support by taking over management tasks. The minutes of the meetings, which outline the committee's independent, scientific advisory results, are made available to the general public through the BfR's website. An essential difference between the scientific committees of the European Food Safety Association (EFSA) and the BfR is that, in line with the BfR's rules of procedure, the BfR Committees play a purely advisory role, and do not conduct any risk assessments.

The fourth appointment period of the BfR committees has been running since January 2018. 210 members were appointed as experts to the 15 committees for the period from 2018 to 2021 after a public call and selection by an appointment board set up for this purpose.

The appointment board is made up of members of the BfR Scientific Advisory Board, one representative of the Senate Commission on Food Safety (SKLM) and of the Max Rubner Institute (MRI), as well as a representative of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and of the Federal Ministry of Food and Agriculture (BMEL).

**i** *The tasks of the BfR Committees, list of members and rules for ensuring independence:*  
[www.bfr.bund.de/en](http://www.bfr.bund.de/en) > *The Institute* > *BfR Committees*  
[www.bfr.bund.de/en](http://www.bfr.bund.de/en) > *The Institute* > *Bf3R Committee*

*Additional committee at the BfR (until 31 March 2019, then moved to the Max Rubner Institute):*  
[www.bfr.bund.de/en](http://www.bfr.bund.de/en) > *The Institute*  
 > *National Breastfeeding Committee*

## Quality management

Why does the BfR require quality management? Structures are needed to ensure quality. They help the BfR to implement important principles such as transparency and traceability and to guarantee the high quality of opinions. The BfR has been developing quality management structures since 2003, first according to DIN EN ISO/IEC 17025 and later according to DIN EN ISO 9001.

The standard DIN EN ISO/IEC 17025 calls for technical and specialist competence of testing and calibration laboratories and thus enables high quality at an international level. Accreditation serves to confirm high-quality and reliable results.

DIN EN ISO 9001 calls for defined work procedures and responsibilities so that high work and product quality can be achieved. This applies to the scientific work of the BfR as well as to administration and communication. The quality criteria and compliance with them are checked in so-called internal and external audits and continual refinement pursued.

Both quality certifications require regular and impartial verification: The certification must be reconfirmed again every three years while re-accreditation takes place every five years. Regular monitoring audits also take place. Quality-assured work according to DIN EN ISO 9001:2015 was most recently confirmed in May 2018 by the independent TÜV Nord Cert GmbH. Adherence of the testing methods of the scientific laboratories to the standard DIN EN ISO/IEC 17025:2005 was most recently verified in November 2017 by the Deutsche Akkreditierungsstelle GmbH (German Accreditation Body, DAkkS).

**i** *Information on BfR quality management:*  
[www.bfr.bund.de/en](http://www.bfr.bund.de/en) > *The Institute* > *Quality management*

## Reference laboratories

National reference laboratories work on food monitoring standards in order to ensure the safety of foods in the entire EU area. These laboratories are appointed on the basis of joint or national regulations and provided with particular expertise in the respective field. In addition to their expertise they are characterised by a high degree of political, social and economic independence. To this end, 19 reference laboratories are located at the BfR from the fields of food and feed safety and food hygiene. They are subdivided into two groups: national reference laboratories under Regulation (EU) 2017/625 which are appointed by the Federal Ministry of Food and Agriculture (BMEL), and other BfR laboratories with a reference function.

The national reference laboratories located at the BfR employ analytical methods of food chemistry as well as molecular biological and microbiological methods in the course of their work. The foundation of their work is formed by legal regulations, such as food and feed law as well as laws and regulations on consumer products.

It is an essential task of the national reference laboratories to develop and validate methods (including inter-laboratory comparison tests) as well as to conduct proficiency tests between official control laboratories in the German federal states (“Laender”) for quality assurance purposes. They therefore assume a watchdog function for early detection of occurring risks and are an important basis for exposure assessments – on a national and increasingly international level.

The national reference laboratories also function as a link between the community reference laboratories of the EU and the food monitoring authorities in the member states. The concerns of the German federal states (“Laender”) are collated by the national reference laboratories and passed on to the relevant European reference laboratories. These in turn are in close contact with the national reference laboratories in the member states. This ensures that work is done according to uniform standards across Europe. This is of particular importance with the monitoring and control of food, for which the principle of the free movement of goods within the EU applies.



*The aim of the research in the national reference laboratories is to develop new, sensitive detection methods.*

In order to address the growing significance of food-borne disease caused by viruses, a European reference laboratory for these viruses was created in 2017. On a national level, the BfR has been tasked since 2018 with establishing a national reference laboratory at the BfR for viruses transmissible through food.

At the end of 2018, the national reference laboratory for the monitoring of viruses and bacteria in bivalve molluscs discontinued its activity at the BfR since the primary European reference laboratory was dissolved due to the impending exit of Great Britain from the EU. The tasks were transferred to other reference laboratories (reference laboratories for the detection and study of zoonosis [*salmonellae*], *Escherichia coli*, viruses transmissible through food and to the reference laboratory for the control of marine biotoxins).

In addition to the national reference laboratories based on EU law, other laboratories with a reference function are also located at the BfR. These include the Reference Laboratory for Genetically Modified Organisms (GMO), the senior expert office for the control of wine imports in line with the wine monitoring regulation, zoonosis reporting and the Consiliary Laboratories for Leptospirae and Yersinia.

**i** *List of the national reference laboratories active at the BfR as well as other laboratories with a reference function:*  
[www.bfr.bund.de/en](http://www.bfr.bund.de/en) > **The Institute**  
 > **Reference Laboratories**

## International cooperation

Due to globalisation flows of goods have changed radically and are subjected to frequent and rapid changes. New raw materials and products are entering the German market. Quality and safety standards in the countries of origins often do not compare to the local standards. For this reason, food and product safety today can only be ensured by means of an international approach.

The BfR is meeting this challenge through close cooperation with partner authorities and global actors on all continents. The exchange of information and the establishment of unified procedures and standards contribute to a high level of safety, even in the case of imported products. The Institute also sets up effective structures for risk assessment, risk management and risk communication in the partner countries for sustainable improvement and thus benefits consumers worldwide.

The Federal Ministry of Food and Agriculture (BMEL) attributes great importance to the further strengthening of such partnerships. The international activities and regional focuses are closely coordinated with one another. Cooperation with partner institutions takes place by means of reciprocal visits, joint symposia, expert exchanges and trainings, e.g. in the context of the BfR Summer Academy, fellowship programmes (Werner Baltes, EU FORA) or Twinning and TAIEX projects.

Cooperation with the European Food Safety Authority (EFSA) is particularly important. The BfR is represented in many EFSA committees and thus makes a significant contribution to food safety in Europe. As the key national EFSA Focal Point, the BfR coordinates the exchange of scientific information between EFSA, the EU member states and the authorities in Germany responsible for food and feed safety as well as involved parties from the economic, political and scientific fields and from consumer associations.

### Food safety is globalised – BfR international cooperation agreements



Last updated: August 2019

Besides close contact with the European sister authorities, cooperation with important non-European trade and cooperation partners was a particular focus in 2018. The signing of a cooperation agreement with the Chilean Authority for Food Quality and Safety (ACHIPIA) is worth mentioning at this point. The BfR currently has cooperation agreements with 51 partners in 30 countries.

The cooperation with partner authorities in China and the application for a grant as part of the European funding programme Horizon 2020 for a European Chinese project also was a focus of the BfR's international cooperation in 2018. In the meantime there are cooperation agreements with six organisations in China. The fourth edition of the EU Food Safety Almanac is also available in Chinese.

Other highlights in 2018 were the numerous multi-day trainings on site with the BfR's cooperation partners. The workshop conducted in Moscow "Introduction to Risk Assessment" as well as the practical workshop in Cape Verde should be highlighted.

The following projects were particularly important for cooperation in 2018:

#### 1. Capacity Building in Uruguay

During a one-week Summer Academy in Montevideo, the BfR trained 40 experts from Uruguay on the topics of official risk assessment in Germany and Uruguay on behalf of the Federal Ministry of Food and Agriculture (BMEL). The BfR and the Ministry of Agriculture of Uruguay have been cooperation partners since 2014.

#### 2. Science gateway to Africa

A three-day workshop of the International Livestock Research Institute (ILRI) with the German research institutes BfR, Friedrich-Loeffler-Institute and the Free University of Berlin also served to develop joint project concepts in February 2018. The ILRI explored the handling of livestock in order to refine food security and safety, reduce the frequency of zoonosis and minimise poverty. At the workshop the focus was on the issues of animal health, food safety and antimicrobial resistance.

#### 3. Development of food safety structures

In collaboration with the Federal Office of Consumer Protection and Food Safety (BVL) as well as the Food Safety Agency (FSA) from Bosnia and Herzegovina (BiH), the BfR conducted an interactive practical workshop on the topic of "Dealing with foodborne disease outbreaks" in Sarajevo on behalf of BMEL. The workshop was aimed at experts from authorities for food safety in BiH and was based on a concept that was developed in April 2018 by food safety authorities from Germany (BfR), Portugal (ASAE), Croatia (HAH) and Cape Verde (ARFA).

#### 4. EU-FORA – The European Food Risk Assessment Fellowship Programme

Also in 2018, two fellows from the EU-FORA fellowship programme were working again at the BfR. EU-FORA is a one-year programme for talented young scientists from the EU who wish to specialise in microbiological or chemical risk assessment in the food chain. The goal of the programme is to strengthen the scientific abilities of the fellows through trainings and practical experiences.

The BfR collaborates closely with partner authorities and global actors on all continents for safe food and feed, chemicals and products.

# Research



One of the BfR's key competences is independent, ad hoc research as required. Because: In-house research work is an important foundation for consultancy activities and the prerequisite for a quick response in the event of a crisis. This is the only way that the Institute can fulfil its legal mandate at a high scientific level and advise political decision-makers competently in a way that reflects the current state of research.

The BfR is independent and transparent in the planning, organisation and performance of all its research activities. To prevent research from being influenced by economic interests, the BfR only applies to public national and European institutions for third-party funding. Comprehensive quality assurance (see page 10) also forms part of the BfR's strategic focus.

The BfR is equipped with modern experimental infrastructure in the fields of chemical analytics, microbial diagnostics, toxicology and food technology. This includes a farm with livestock and aquaculture, a facility for performing experimental work on animals, and modern molecular and cell biology laboratories as well as protein-biochemical laboratories for developing alternative and substitute methods to animal experiments. Work up to safety level S2/L2 can be performed in the large and small animal laboratory. Microbiological work is possible up to level L3. The laboratory infrastructure is continually adapted to scientific developments and technical possibilities. In this way, nano-analytics was able to be expanded to include asymmetric flow field flow fractionation and a secondary ion mass spectrometry (ToF-SIMS). A high throughput-high content screening system, as well as a multi-photon microscope and super-resolution microscope are available to identify toxicological molecular mechanisms of action for the development of test methods. This instrumental equipment enables interdisciplinary investigations and assessments along the entire feed and food chain as well as the goods and product chain.

Future-oriented training and support of young scientists represents one of the BfR's strategic tasks. With the BfR's doctoral training programme, PhD candidates obtain additional methodological and in-depth technical skills. Due to its modular design, the structured programme for continuing and further training enables individual specialisations and thus also reflects the diversity of disciplines represented at the BfR. The conclusion of individual supervision agreements retains the rights and duties of the PhD candidates and supervisors.

The setup of junior research groups allows young scientists to dedicate themselves to a specific research topic shortly after completing their PhD and to take on responsibility for staff for the first time. In this way, the junior group leaders become qualified for leadership positions and, at the same time, advance research into selected specialist topics of the BfR. The junior research groups run for a maximum of five years. There are currently five junior research groups on the topics of supply chain models, authenticity along the supply chain, tattoos, nanotoxicology and toxicokinetic modelling.

**i** Overview of main research areas at the BfR:  
[www.bfr.bund.de/en](http://www.bfr.bund.de/en) > Research



There are currently five junior research groups at the BfR.

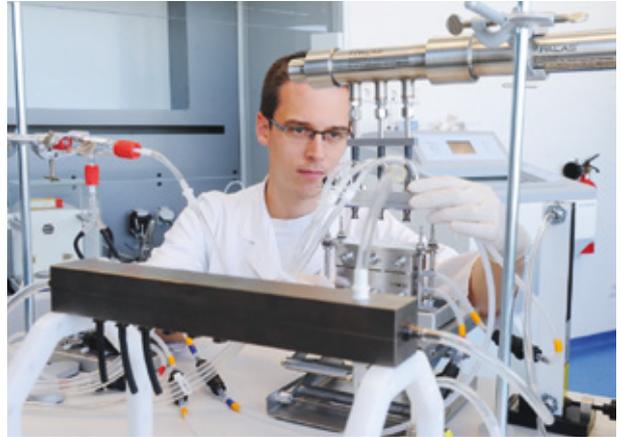
## Presented: New third-party funded projects in 2018

Nanotechnology is enabling the manufacture of a variety of new materials (NEMs = novel and emerging materials). These are also being investigated for possible harmful effects on people and the environment. In this dynamically developing field, it is worth consolidating and collating the continually increasing data on safety aspects in order to enable easy access to the data records. Partners from universities, the industry and authorities are working on this in the project **“The European Nanotechnology Community Informatics Platform: Bridging data and disciplinary gaps for industry and regulators (NanoCommons)”**, which is funded by the **European Commission**.

**i** Information is available at:  
[www.nanocommons.eu](http://www.nanocommons.eu)

The countless possibilities in manufacturing nanomaterials means that a variety of different nanomaterials can be manufactured that differ from one another in size, morphology or surface finish, for example. This variety makes testing each individual nanomaterial for risk assessment practically impossible. Proven grouping and analogy processes (read across) for risk assessment are, however, not yet completely applicable for nanomaterials. **The European Commission**-funded project, **“GRACIOUS: Grouping, Read-Across, Characterisation and classification framework for regulatory risk assessment of manufactured nanomaterials and Safer design of nano-enabled products”** is starting up to this end. The aim of the project is to establish a framework for grouping and analogy processes that are based on information about release, exposure and behaviour in the environment as well as on physical-chemical, toxicokinetic and toxicological data.

**i** Information is available at:  
[www.h2020gracious.eu](http://www.h2020gracious.eu)



*The aim of the EU project NanoCommons is to combine the quantity of data in the field of nanotechnology and make it more easily accessible.*

Zoonosis pathogens, which can present a health risk to people and animals, are found on the shells of table eggs. The research project, **“UVegg – Use of UV/UV-LED radiation for reduction of microorganisms on eggs”** is dedicated to developing and establishing techniques and processes for the practical use of UV light to reduce (zoonotic) microorganisms. The project is funded by the **Federal Ministry of Food and Agriculture** and should detect not only the efficiency of the process but also clarify the safety health of treating table eggs using UV radiation in terms of health.

The **Federal Ministry of Food and Agriculture**-funded project, **“SmallFishFood – Small Fish and Food Security”** is investigating the use of small processed fish in Ghana, Uganda and Kenya with regard to nutrition and food security in Africa. The aim is to refine production processes in order to achieve higher quality and safety as well as a longer shelf-life. The BfR, as a project partner, is particularly addressing dried and cured fish and assessing food quality and safety along the value chain. In the process, critical points for food quality and safety are identified, suitable strategies for refining the nutrition, quality and safety along the value chain are developed and transfer workshops conducted with suitable interest groups (fisheries, processing plants, retail market, transport companies, policy makers, consumer associations and scientists).

## The BfR's research activities are providing important impulses for consumer health protection.

Together with other European research institutes, the BfR is training outstanding doctoral candidates within the scope of the **European Commission**-funded, interdisciplinary **training network EUROoC**. In the area of Organ-on-a-chip technology, the PhD candidates receive interdisciplinary training in a trans-European network. The aim of the research project is to develop the sophisticated Organ-on-a-chip systems with refined physiological significance that goes beyond simple cultivation of single-cell layers on inert membranes and includes analysis of endpoints.

**i** Information is available at:  
[www.eurooc.eu](http://www.eurooc.eu)

The **German Research Foundation (DFG)** supports the development of efficient vaccines for Africa with the project **“AfRota – Antigens and Reassortant Strains for Rotaviruses Circulating in Africa”**. Rotavirus infections constitute the most significant cause of severe, gastrointestinal effects in young children worldwide. Life-threatening disease progressions are observed primarily in developing countries in Africa and Asia. The recently-introduced live vaccines have led to a clear decline in severe rotavirus illnesses worldwide, although the effectiveness of this vaccine is noticeably less in Africa than in Europe and North America. The reason for this could be that the vaccines are primarily based on Rotavirus strains occurring in Europe and North America and therefore have less effectiveness against the specific Rotavirus strains in Africa. The aim of this project is therefore to develop strategies to manufacture antigens and reassortant strains for use in future vaccines based on Rotavirus strains from Africa.

Despite a significant decline in lead exposure in the past decades, the lead quantities in blood of people in Germany have remained static since 2002 at a level of 10 µg Pb/l blood according to information from the **Federal Environment Agency**. Since a further reduction in background exposure should be aimed for due to the toxicity of lead, in the Federal Environment Agency-funded project, **“Exposure pathways for lead”**, these entry routes are to be identified, checked and assessed using the available scientific data. Data gaps should be identified and possible minimisation measures pointed out with the results.

Through the **development of a schooling platform for determining practical expertise in 3R methods – 3R-SMART** – the **Federal Ministry for Training and Research** is funding visibility of research activities and available methods for implementing the 3R principle in the use of animals for scientific purposes. The 3R SMART platform is integrated into the existing schooling platform for laboratory animal science operated by the University of Marburg and supplements the existing training on “refinement” by additional training on methodical “replacement” and “reduction” approaches to animal experiments. The 3R SMART platform should be used in the future for acquiring and detecting experts on laboratory animal science. After conclusion of the project, the plan is to integrate 3R SMART at a European level into the EU platform “Education and Training in Laboratory Animal Science” (ETPLAS).

**i** Information about these and other third-party funded projects is available at:  
[www.bfr.bund.de/en](http://www.bfr.bund.de/en) > Research > Third party projects of the BfR

# Personnel and training



The growth in personnel experienced over the last few years continued in 2018. Over the course of the year, the number of employees increased from 943 to 998 employees, among them 25 trainees, 134 civil servants and 839 salaried employees. The number of scientific officers increased to 432, while the number of doctoral candidates increased to 76. The majority of scientific personnel come from natural science disciplines such as medicine, veterinary medicine, pharmacy, biology, chemistry, biochemistry, food chemistry and nutrition science. The average age is 42.6 years. Besides the operative personnel work, the acquisition of qualified personnel, re-auditing by berufundfamilie GmbH and personnel development – particularly in the area of communication – formed particular work priorities in 2018.

### Staff recruitment: Digitally and on site

In 2018, 249 positions were advertised, for which 5,326 applications were received, almost entirely via the online application portal, which was introduced in 2015. Only 3.6 per cent of applications were received by post. The design of the job advertisements was reworked in 2018 and adjusted to the corporate design.

In order to increase name recognition and acquire qualified personnel, the BfR was again represented at national and international trade fairs in 2018. In addition to the regular trade fair appearances at the jobvector career day in Berlin and the German Pharm-Tox Summit in Göttingen, the BfR was also present at three international trade fairs: at the BCF Career Event in Utrecht (NL), the Talent Fair of GAIN (USA) as well as the European Career Fair at MIT (USA). The BfR thereby strengthened its reputation overseas and presented itself as an attractive employer for international scientists. Furthermore, the BfR took part in the Sticks & Stones trade fair in Berlin for the second time in 2018. Sticks & Stones is currently Europe's largest LGBTI career event (LGBTI stands for Lesbian, Gay, Bisexual, Transsexual/Transgender and Intersexual).

### Personnel development: Mission statement and communication

Committed and motivated employees work at the BfR, who apply their specific knowledge and skills according to their area of responsibility and make the BfR an internationally recognised institute for consumer protection. In the process, people with different jobs and experiences come into contact. In the mission statement we have captured our understanding of collaboration as follows:

» Our work is characterised by an open and respectful approach. Tolerance, reliability and mutual appreciation form our common foundations. «

Of course, where people work together, conflicts will arise sooner or later. In the process it is crucial to recognise these differences quickly, to speak about them and clarify them together. To this end, as of 2018, the BfR has been offering its employees a training series at which they can learn "Nonviolent Communication" according to Marshall Rosenberg. Applying this communication concept helps in resolving acute differences more quickly and refining the working environment sustainably. The seminars are offered consecutively and are increasingly in demand.

## Balancing career and family: Re-auditing process

The BfR promotes the balance of work and family life and has therefore been certified as a family-friendly employer by berufundfamilie Service GmbH since 2009. The existing compatibility measures include flexible work times without core work times, parent-child rooms at all locations, training options for employees absent due to family commitments, as well as remote working options, for example. Since 2015, the BfR has also been working closely with a family service provider that arranges regular, emergency and holiday childcare for BfR employees as well as counselling and placement services for relatives in need of care.

In 2018, the re-auditing and confirmation of the certificate was granted for the next three years. The certificate is now permanent. After two successful re-audits in 2012 and 2015, the BfR will from now on be responsible for the management and design of its family and life-phase conscious personnel policy. To ensure quality, berufundfamilie Service GmbH confirms them every three years within the scope of a dialogue procedure.

Successful auditing recognises the continual efforts of the BfR so far to achieve a family-friendly and attractive work environment. This path is consistently pursued.



*The BfR supports professional training for securing talent of the younger generation.*

## Training

In 2018, the BfR provided training for the careers office management clerk, laboratory chemist, laboratory biologist, animal carer (clinic and research field), IT specialist (for system integration) and plant mechanic (for sanitation, heating, air conditioning). Four trainees have completed their training with good to very good results. At the same time, seven employees began their training at the BfR.



### Outlook: Mentoring programme and workplace health management

About two thirds of the employees at the BfR are women. The proportion of women in management positions is about 32 per cent. In 2018, plans for a mentoring programme were started to make high-potential performers in the BfR visibly and audibly stronger and support them accordingly, and thereby increase the proportion of women in management roles. Besides the actual mentoring relationship between the mentee and an experienced person who acts as the mentor, this includes additional seminars on the issues of “women and management” as well as networking events. The programme should begin in 2019 with ten mentees and will run for a year.

A new concept will likewise be developed for workplace health management (BGM). The BfR already supports its employees in various ways in maintaining health and thereby goes beyond the statutorily prescribed measures within the scope of occupational safety. Originating from an analysis of the actual state, the future BGM concept shall determine the medium- and long-term goals of the BfR with regard to maintaining health, define targeted measures and monitor their implementation. Besides balancing work and family, promoting health maintenance is considered an important component for work satisfaction and maintaining employees' performance.

More women in  
management positions –  
that is the goal of the  
BfR mentoring programme.



### Working at the BfR

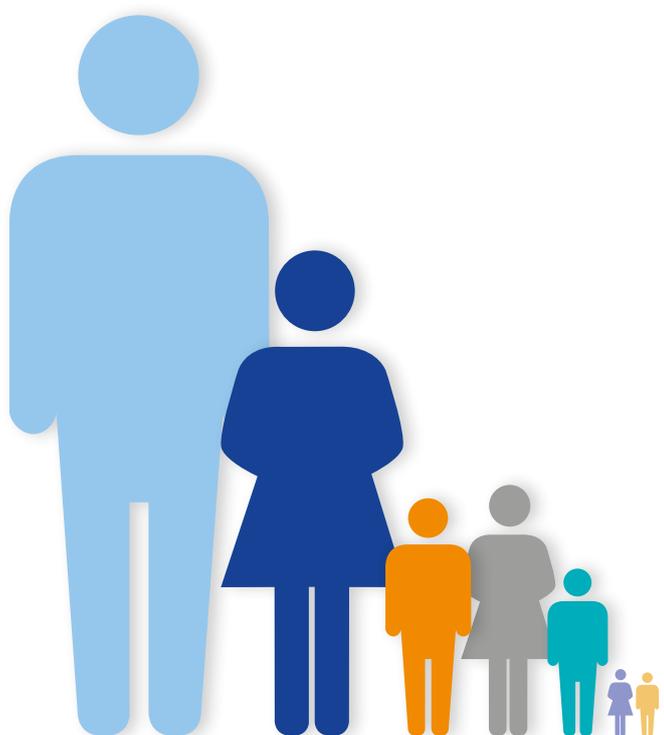
Committed and motivated employees work at the BfR, who apply their specific knowledge and skills according to their area of responsibility and make the BfR an internationally recognised institute for consumer protection.

People with different careers and experiences come together at the BfR. The majority of scientific personnel come from natural science disciplines such as medicine, veterinary medicine, pharmacy, biology, chemistry, biochemistry, food chemistry and nutrition science. Target orientation, personal responsibility, loyalty and performance orientation characterise the collaboration.

# Key data

How many scientists does the German Federal Institute for Risk Assessment employ? Which committees do they serve on? How does the institute fund itself? The answers to these questions are provided in the following chapter on the key data of the BfR. Unless indicated otherwise, the figures relate to the reporting year 2018.

## Personnel



Scientists	432
Administrative staff	226
Technical assistants	105
PhD candidates	76
Apprentices/trainees	25
Animal carers	23
Other	111

A total of **998** employees

## Participation in bodies

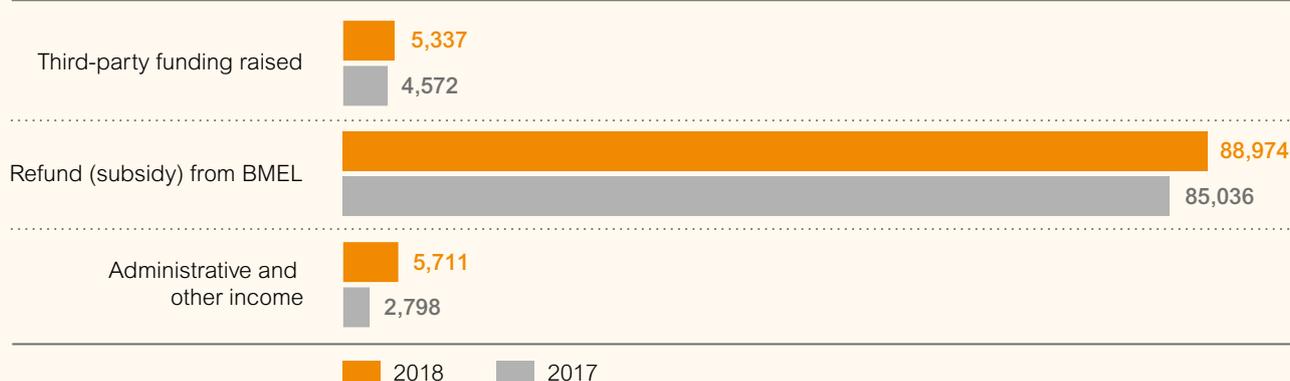
National	Number
Federal bodies	43
Federal government-federal state ("Laender") bodies	59
Bodies of the Federal Office of Consumer Protection and Food Safety (BVL)	31
Bodies of other institutions	128
<b>Total number</b>	<b>261</b>

European level	Number
Bodies of the European Commission	46
Bodies of the European Food Safety Authority (EFSA)	40
Bodies of the European Chemicals Agency (ECHA)	18
Bodies of other European organisations	33
<b>Total number</b>	<b>137</b>

Worldwide	Number
WHO/FAO: Bodies of Codex Alimentarius	19
WHO/FAO: Other bodies	3
Bodies of other United Nations specialised agencies	8
OECD bodies	43
Other bodies involved in global standardisation activities	12
<b>Total number</b>	<b>85</b>

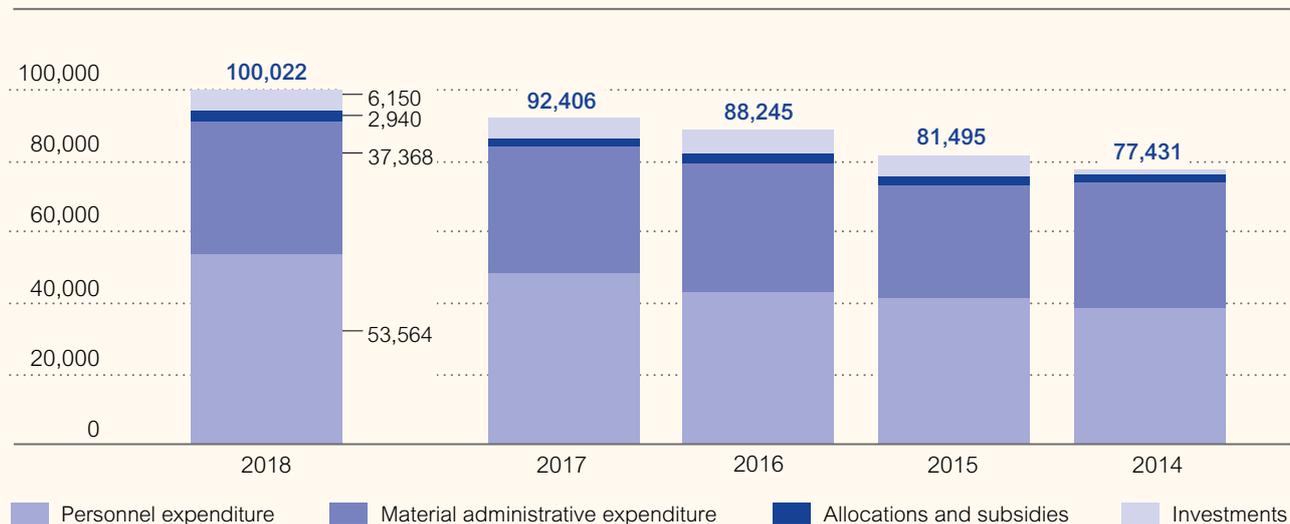
## Budget

### Income (in thousands of euros)



In 2018, the BfR spent approximately  
**100 million euros.**

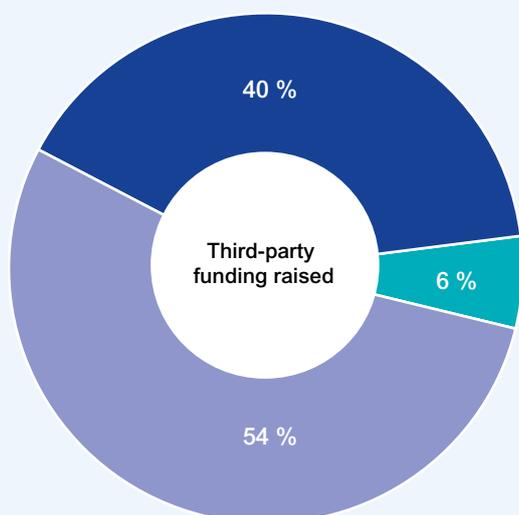
### Expenditure (in thousands of euros)



### Selected expenditure

Scientific collections and libraries	577,795 €
Initial and further training	411,771 €
Public relations work, publishing and documentation	1,099,983 €
Conferences, trade fairs, exhibitions	319,820 €

## Research



Third-party funding raised	Funding (in thousands of euros)
National research projects (DFG, Federal government etc.)	2,880
International research projects (EU, EFSA etc.)	2,147
International collaboration (EU, EFSA, BMZ etc.)	310
<b>Total income</b>	<b>5,337</b>

Third-party funding  
in 2018 amounted to  
**5.3 million euros.**

### Research projects

	in thousands of euros	
<b>International</b>	<b>100 %</b>	<b>2,147</b>
EU	69 %	1,479
EFSA	28 %	605
Other	3 %	63

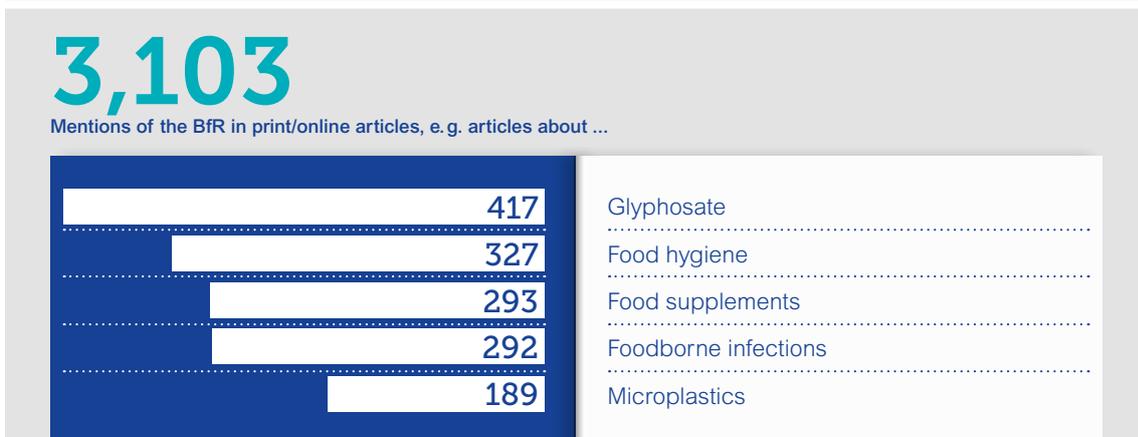
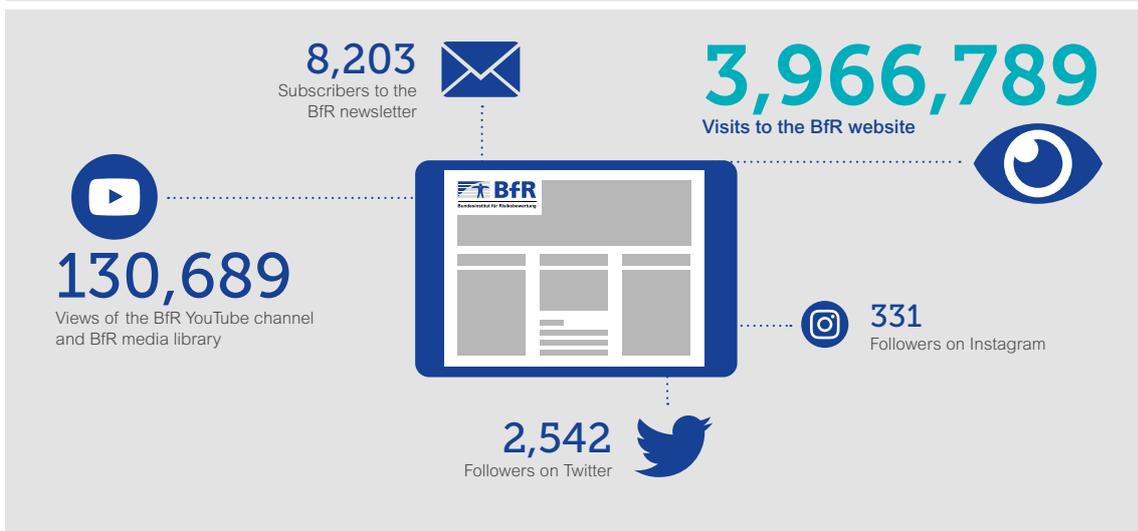
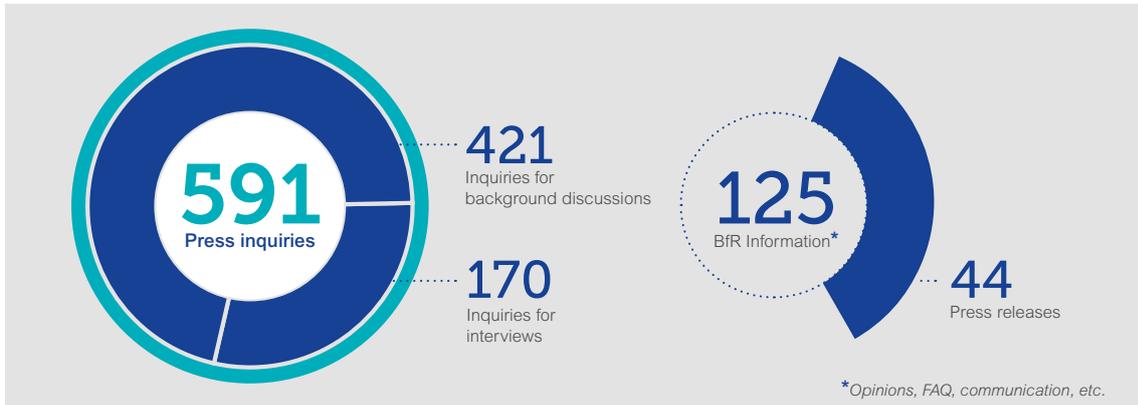
	in thousands of euros	
<b>National</b>	<b>100 %</b>	<b>2,880</b>
Federal government	76 %	2,191
DFG	20 %	569
Other	4 %	120

## Publications

	Number
Book publications	1
Contributions to compilations	12
Journal publications	213
Contributions to conference proceedings	122
Poster contributions	237
Presentations (including conference speakers)	900
Dissertations/postdoctoral papers/master theses/ diploma theses/bachelor theses	57
Reports/EFSA	28

**900 presentations**  
were held in 2018.

## Press activities of the BfR



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More information: [www.bfr.bund.de/en](http://www.bfr.bund.de/en)

# Opinions

The BfR opinions are risk assessment reports. They include the elements of a risk assessment, describe the uncertainties and their origins, and formulate aims and strategies in order to minimise risk.

## Expert opinions

<b>Total number</b>	<b>3,312</b>	
Assessments in legally prescribed procedures, e. g. authorisation procedures addressed to the Federal Office of Consumer Protection and Food Safety (BVL) or to the Federal Institute for Occupational Safety and Health (BAuA)	2,287	<b>The 2,287 assessments in legally prescribed procedures include:</b>
Expert opinions for supervisory federal ministries (BMEL, BMU, BMVI)	243	Assessments pursuant to plant protection legislation
Answers to scientific inquiries from EFSA and EFSA Focal Points of other member states as well as requests for scientific opinions from the EFSA	36	Opinions on chemicals pursuant to chemicals legislation (REACH)
Other expert opinions (authorities, associations, members of the public, NGOs) outside of legally prescribed procedures	746	Assessments pursuant to biocides legislation
		Opinions on procedures stipulated in feed legislation
		Opinions on exemptions from consumer protection provisions in food legislation, Articles 54, 68 Food and Feed Code (LFGB)
		Other risk assessments in legally prescribed procedures

*Note: The figures provide an impression of the type and scope of the expert opinions of the BfR in 2018. They are a representation of the OUTPUT. Due to the subjects and scientific quality, a small number of risk assessments can be more valuable for consumer protection than a large number of risk assessments. For this reason, the figures allow no or limited conclusions to be reached regarding the OUTCOME of the BfR.*

The risk assessments conducted by the BfR also always form part of the Institute's risk communication. They are published ad hoc or in crisis situations. Because: Unless there are confidentiality concerns, the BfR has a duty to communicate assessments of general public interest. In 2018, the following opinions were published among others.

#### Including selected opinions

<b>15/02/2018</b> BfR No. 006/2018 (updated)	The entry of perchlorate into the food chain should be reduced
<b>15/02/2018</b> BfR No. 007/2018 (updated)	The entry of chlorate into the food chain should be reduced
<b>27/02/2018</b> BfR No. 008/2018 (updated)	Highly refined mineral oils in cosmetics: Health risks are not to be expected according to current knowledge
<b>19/04/2018</b> BfR No. 009/2018	Shiga toxin-forming <i>E. coli</i> in food: Prediction of the disease-causing potential of the various strains not yet possible
<b>23/04/2018</b> BfR No. 010/2018	Table potatoes should contain a low levels of glycoalkaloids (solanine)
<b>11/05/2018</b> BfR No. 011/2018	Hygiene for chicken eggs – protection from <i>Campylobacter</i>
<b>30/05/2018</b> BfR No. 014/2018	Polyamide oligomers: plastic components from kitchenware
<b>31/05/2018</b> BfR No. 015/2018	For healthy teeth: fluoride prevention for infants and young children (in German)
<b>14/06/2018</b> BfR No. 020/2018	Updated risk evaluation of levels of 1,2-unsaturated pyrrolizidine alkaloids (PA) in foods
<b>18/06/2018</b> BfR No. 021/2018	<i>Francisella tularensis</i> infections from foods unlikely
<b>26/07/2018</b> BfR No. 024/2018	Release of metals from enamel-coated grill racks: Several give off too much
<b>07/08/2018</b> BfR No. 026/2018	EU maximum levels for cadmium in food for infants and young children sufficient
<b>05/09/2018</b> BfR and FLI No. 028/2018	Brucellosis: Although risk of infection from mare's milk is low in Germany, the BfR still recommends heat treatment
<b>08/11/2018</b> BfR No. 034/2018	Tetrahydrocannabinol levels are too high in many hemp-containing foods – health impairments are possible
<b>07/12/2018</b> BfR No. 039/2018	Poppy seeds in food: Concentration of opium alkaloid thebaine should be reduced as much as possible (in German)
<b>07/12/2018</b> BfR No. 040/2018	Risk assessment of chondroitin sulfate in food supplements
<b>20/12/2018</b> BfR No. 044/2018	Erucic acid: BfR endorses proposed maximum levels, but foods with added fats should be restricted too
<b>21/12/2018</b> BfR No. 045/2018	Game meat: health assessment of human-pathogenic parasites

# Events

Every year, the BfR Academy organises a large number of events relating to topics from the BfR's field of work. The aim is to promote communication with different target groups and to provide information on the BfR's assessments and research results. In 2018, a total of 121 events took place. In addition to scientific dialogue and information events, several training courses for disseminators were conducted.

**i** More information: [www.bfr.bund.de/en](http://www.bfr.bund.de/en) > **BfR Academy events** and [www.bfr-akademie.de/english](http://www.bfr-akademie.de/english)



19 to 28 January 2018

## The BfR at International Green Week in Berlin

Whether in the refrigerator or on a dishcloth, on eggs, meat or salad, food can be contaminated with bacteria, viruses or parasites. Consumers frequently underestimate health risks that could arise through errors in storage and preparation at home. Under the motto "Germs and more – Clever kitchen hygiene", the BfR raised awareness of these risks and provided information on measures to protect oneself against food-related illnesses. For ten days experts of the BfR were available to answer questions and brought the issue of kitchen hygiene up close at International Green Week 2018.



12 to 16 March 2018

## Summer Academy Uruguay

In March 2018, a Summer Academy took place in Montevideo in collaboration with the Ministry of Agriculture of Uruguay. On behalf of the Federal Ministry of Food and Agriculture, the BfR supported the decisive first steps to establish risk evaluation structures in Uruguay. Together with 40 participants, the BfR experts discussed the principles of risk assessment and risk communication as well as specific issues such as antimicrobial resistance and dealing with uncertainties.



11 to 13 April 2018

**Training event for the public health service**

The three-day training for the public health service took place again in 2018 in cooperation with the German Federal Environment Agency and the Robert Koch Institute. Once again, the rows were filled with more than 400 experts from the public health service such as health or veterinary medicine and chemical investigation offices. Topics of discussion included acceptance of vaccines among doctors, aluminium in cosmetics and food as well as microplastics in the environment.



**BfR-Summer Academy**

Under the motto “From experts to experts”, the seventh BfR-Summer Academy of the German Federal Institute for Risk Assessment took place in 2018. For two weeks, 40 experts from Asia, Europe and Latin America dealt with the issues of risk assessment and risk communication in the area of food safety. In addition to presentations, workshops took place in which topics were addressed in depth and methods applied in practice. The training was intended to give the participants the drive to apply and pass on in their home countries qualifications and skills acquired. In addition to an intensive specialist exchange, the BfR-Summer Academy also offers the opportunity to network internationally.

25 June to 6 July 2018



Information events

Further training courses

Scientific dialogue

**REACH Compliance –  
Workshop on data quality  
in registration dossiers**

Great efforts are necessary to refine the quality of registrations under the European Chemicals Regulation REACH. This is one result of the event “REACH Compliance – A workshop on data quality in registration dossiers”.

The REACH Compliance Project is a joint project of the BfR and the Federal Environment Agency (UBA). This project investigates to what extent data on the environment and human health are available in registration dossiers and whether they fulfil the requirements of REACH on selected toxicological and ecotoxicological endpoints.



23 to 24 August 2018

25 to 26 August 2018



**The BfR attended the Open Day  
at the German Federal Ministry of Food and Agriculture**

On the Open Day at the German Federal Ministry of Food and Agriculture, the German Federal Institute for Risk Assessment presented itself with the theme “Good mould, bad mould” and tested the knowledge of visitors to the booth on the risk of mould fungus toxins (mycotoxins) in food. Is every mould equally toxic or are there exceptions? How can mould formation in food be avoided? These and many other questions were answered at the BfR's booth.





16 October 2018

**Symposium 50 years of the BfR Committee for Cosmetics**

The Committee for Cosmetics has now been in the service of consumer health protection for 50 years with its scientific experts. Since the beginnings in the former Federal Health Office, the work of the committee has gained recognition, first in Germany, but also increasingly in the European context.

The excellent work of the committee was recognised at its 50-year anniversary in 2018 with a scientific symposium. In contributions from experts, the fields of work of the committee were presented using current examples.

**BfR stakeholder conference “Is it fake? Science in the age of multiple truths”**

The expression “fake news” has become a familiar catchphrase. It means false news that is dispersed on the Internet with the intention to manipulate – mostly related to a subliminal political message. More and more often, science is becoming the target of “fake news”. At the same time, reports about fabrications in research itself (“fake science”) and about pseudo-scientific predatory journals (“fake journals”) are becoming more frequent. On top of that, criticism of science itself is happening for all sorts of reasons.

Scientifically underpinned arguments, whether in climate research or the health assessment of plant protection products, are being released as nothing more than an opinion to share or not. Hard facts are being replaced by perceived knowledge. The crisis of trust for science was the reason for the German Federal Institute for Risk Assessment holding its 7<sup>th</sup> stakeholder conference with notable speakers under the motto “Is it fake? Science in the age of multiple truths”.

15 November 2018



Information events

Further training courses

Scientific dialogue

# Third-party funded projects

## Research on human, animal and environmental health (One Health)

Time period	Acronym	Topic
08/2017–07/2020	RoBoPub	Refinement of public health through a better understanding of the epidemiology of rodent-borne illnesses
09/2017–08/2020	#1Health-PREVENT	One Health interventions to prevent zoonotic spread of antimicrobial-resistant pathogens
09/2017–08/2020	PAC-CAMPY	Prevention and control of <i>Campylobacter</i> infections: A “One Health” approach
01/2018–12/2022	One Health EJP	Promoting One Health in Europe through joint actions on foodborne zoonoses, antimicrobial resistance and emerging microbiological hazards
01/2018–12/2020	ORION	One Health surveillance initiative on harmonisation of data collection and interpretation
01/2018–12/2020	COHESIVE	One Health structure for signalling and risk assessment of emerging threats across Europe
01/2018–12/2019	IMPART	Improving phenotypic testing of AMR by development of rapid and sensitive screening assays for emerging resistances and setting missing ECOFFs
01/2018–12/2020	ARDIG	Antibiotic Resistance Dynamics: the influence of geographic origin and management systems on resistance gene flows within humans, animals and the environment
01/2018–12/2019	RaDAR	Integrative modelling approaches for source attribution and health impact assessment of antimicrobial resistance
01/2018–12/2020	TOXdetect	Development and harmonisation of innovative methods for comprehensive analysis of toxigenic bacteria, i.e. <i>Staphylococci</i> , <i>Bacillus cereus</i> and <i>Clostridium perfringens</i>
01/2018–12/2020	NOVA	Novel approaches for the design and evaluation of cost-effective surveillance across the food chain

## Research on alternative methods to animal experiments

Time period	Acronym	Topic
04/2014–03/2018	BB3R	Innovations in the 3R Research – Genetic Engineering, Tissue Engineering and Bioinformatics
07/2017–06/2020	Severity assessment	Severity assessment from an animal's point of view
04/2016–03/2018	Cognitive dysfunction	Cellular mechanisms of critical illness-induced cognitive dysfunction
02/2017–01/2020	LivSys-Transfer	Transfer of the LivSys <i>in vitro</i> system for hepatotoxicity into application
01/2017–12/2019	Combiomics 2	Investigation of mixture effects of pesticides <i>in vitro</i>
12/2018–11/2022	EUROoC	Interdisciplinary training network for advancing Organ-on-a-chip technology in Europe
04/2018–03/2021	3R-SMART	Alternative methods – Configuration: 3R-SMART – Setting up of a training platform to establish practical expertise in 3R methods – TP 3

	Further information
	BMBF (FKZ: 01KI1721B)
	BMBF (FKZ: 01KI1727C)
	BMBF (FKZ: 01KI1725B)
	EU (GAN: 773830) <a href="https://onehealthjep.eu">https://onehealthjep.eu</a>

	Further information
	BMBF (FKZ: 031A262D) <a href="http://www.bb3r.de">www.bb3r.de</a>
	DFG (GZ: LE2356/5-1)
	Federal states (Einstein-Foundation: A-2014-223)
	BMBF (FKZ: 031L0119C)
	BMBF (FKZ: 031L0118A)
	EU (GAN: 812954) <a href="https://eurooc.eu">https://eurooc.eu</a>
	BMBF (FKZ: 031L0113C)

#### Abbreviations of funding agencies

<b>BfG:</b>	German Federal Institute of Hydrology
<b>BLE:</b>	German Federal Office for Agriculture and Food
<b>BLV Schweiz:</b>	Swiss Federal Food Safety and Veterinary Office
<b>BMBF:</b>	German Federal Ministry of Education and Research
<b>BMEL:</b>	German Federal Ministry of Food and Agriculture
<b>BMG:</b>	German Federal Ministry of Health
<b>BMU:</b>	German Federal Ministry of the Environment, Nature Protection and Nuclear Safety
<b>CEN:</b>	European Committee for Standardization
<b>DFG:</b>	German Research Foundation
<b>EFSA:</b>	European Food Safety Authority
<b>EU:</b>	European Union
<b>ILRI:</b>	International Livestock Research Institute, Kenya
<b>ISS:</b>	National Institute of Health, Italy
<b>LANUV:</b>	North Rhine-Westphalia State Agency for Nature, Environment and Consumer Protection
<b>RKI:</b>	Robert Koch Institute

#### Other abbreviations

<b>FKZ:</b>	Grant number
<b>GAN:</b>	Grant Agreement Number
<b>GZ:</b>	Reference number
<b>NRW:</b>	North Rhine-Westphalia

### Research on authenticity testing of food and feed

Time period	Acronym	Topic
05/2016–04/2019	Animal-ID	Animal ID: Development and validation of innovative methods for traceability and authentication of animal proteins in food and feed
09/2016–12/2019	FoodAuthent	Development of a system for collecting, analysing and using product authenticity data

### Research on feed safety

Time period	Acronym	Topic
01/2014–03/2019	Tender melamine	Detection of melamine and cyanic acid in feed by LC-MS/MS
06/2015–12/2018	Tender mycotoxin	Foodstuffs – Determination of T-2 and HT-2 toxin in cereal-based foods for infants and young children by LC-MS/MS

### Research on exposure assessment and assessment of biological risks

Time period	Acronym	Topic
01/2014–04/2018	MedVet-Staph 2	Joint project: <i>Staphylococcus aureus</i> as a zoonotic pathogen: A paradigm shift?
06/2015–05/2018	NutriAct	Nutritional intervention for healthy aging: food patterns, behaviour, and products
11/2015–11/2018	EsRAM	Development of multi-stage reduction measures for antimicrobial-resistant pathogens in broiler poultry
01/2016–01/2018	ENGAGE	Creation of next-generation sequencing for genome analysis of bacterial pathogens in Europe
01/2010–12/2019	Leptospirose	Reference laboratory for leptospirosis – Studies on the occurrence of leptospirosis in small mammals
03/2016–02/2019	Rotaviren	Characterisation of the zoonotic potential of rotaviruses in poultry
04/2016–03/2019	CAMPY-TRACE	Combined real-time PCR with live/dead discrimination approach for the quantitative risk assessment of viable <i>Campylobacter</i> applicable in international control strategies
01/2017–12/2018	MolTypList	Molecular Typing of <i>Listeria monocytogenes</i> in food and humans as the basis for efficient risk assessment and control of listeriosis in Germany
07/2017–06/2018	Vegan diet	Vegan diet and bone health
01/2017–10/2018	Vibrios	Development of an early warning and information system for the occurrence of vibrios in coastal bathing waters
09/2018–10/2021	UVegg	Use of UV/UV LED radiation to reduce microorganisms on eggs
09/2018–08/2021	SmallFishFood	Small Fish and Food Security: Towards innovative integration of fish in Africa food systems to refine nutrition
06/2018–05/2021	BLV Schweiz	Stability and inactivation of Hepatitis E virus in food production and the environment
09/2017–09/2018	Hepatitis E	Hepatitis E virus in fresh and cured pork meat
05/2018–04/2021	AfRota	Antigens and reassortant strains for rotaviruses circulating in Africa

Further information
BMEL (FKZ: 2816503514)
BMEL (FKZ: 2816502914)

Further information
CEN (SA/CEN/ENTR/522/2013-11)
CEN (SA/CEN/ENTR/520/2013-17)

Further information
BMBF (FKZ: 01KI1301C)
BMBF <a href="http://www.nutriact.de">www.nutriact.de</a>
BMEL (FKZ: 2817701614)
EFSA (GP/EFSA/AFSCO/2015/01/CT1)
RKI (FKZ: 1369-365)
DFG (GZ: JO369/4-3)
BMBF (FKZ: 031B0054A)
BMG (FKZ: GE20160326)
Elsbeth Bonhoff Foundation (Project number 167)
BfG (part of a BMU project with grant number: 3716622030)
BMEL (FKZ: 281A106716)
BMEL (FKZ: 2817LEAP06)
BLV Schweiz (Project number 4.18.01)
ISS (Project number 2S34)
DFG (GZ.: JO 369/5-1)

#### Abbreviations of funding agencies

<b>BfG:</b>	German Federal Institute of Hydrology
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## Research on the detection of contaminants and for the assessment of chemical risks

Time period	Acronym	Topic
05/2015–05/2019	EuroMix	European Test and Risk Assessment Strategies for Mixtures (EuroMix)
04/2016–04/2020	EuroCigua	Risk characterization of ciguatera food poisoning in Europe to determine the incidence and epidemiological characteristics of ciguatera cases in Europe
08/2016–10/2018	REACH III	Availability of health and environmental data for high tonnage chemicals under REACH
05/2018–03/2019	Exposure pathways for lead	Exposure pathways for lead into the human body
12/2018–11/2021	PROSPeCT	Sorption and transfer behaviour of PFAA and selected precursor substances (precursors) in the soil-crop impact pathway for estimating and assessing the threat of PVC contamination

## Research on modern methods in toxicology

Time period	Acronym	Topic
07/2015–06/2018	Okadaic acid	Molecular characterisation of the toxicological effect of the marine biotoxin okadaic acid in <i>in vitro</i> models for the human gastrointestinal barrier and liver
12/2015–12/2018	PFOA	Molecular mechanisms of the toxicity of perfluorooctanoic acid (PFOA)
10/2017–09/2020	Gastrointestinal barrier	Interaction of metabolism and transport of toxicological-relevant compounds in the gastrointestinal barrier
06/2017–05/2020	PA1	Identification of the structure-dependent toxicity of hepatotoxic pyrrolizidine alkaloids
06/2017–05/2020	PA2	Investigation of hepatotoxic and genotoxic potential as well as metabolism of pyrrolizidine alkaloids present in food
06/2017–06/2018	Prediction of skin absorption	<i>In silico</i> methods for the prediction of dermal absorption of pesticides

## Research to harmonise and standardise exposure assessments

Time period	Acronym	Topic
01/2016–12/2021	Tender Animal feeding	Determination of pyrrolizidine alkaloids in feed materials and compound feed by LC-MS/MS
12/2016–08/2018	FOODEX 2	Database of processing techniques and processing factors compatible with the EFSA food classification and description system
04/2017–11/2018	National poisoning monitoring	Pilot study to establish national monitoring of poisonings
01/2017–12/2021	HBM4EU	European Human Biomonitoring Initiative
09/2017–06/2021	LIFE VERMEER	Integrating the software tools VEGA, toxRead, MERLIN-Expo and ERICA into a single platform for risk assessment and substitution of risky substances
10/2017–09/2020	JATC	Joint Action on Tobacco Control
01/2018–01/2020	ComRisk	Communication inside Risk Assessment and Risk Management

	Further information
	EU (633172) <a href="http://www.euromixproject.eu">www.euromixproject.eu</a>
	EFSA (GP/EFSA/AFSCO/2015/03)
	BMU (FKZ: 3716674220)
	BMU (FKZ: 3717 62 212 0)
	Ministry of the Environment, Climate Protection and the Energy Sector Baden-Württemberg (Grant number: BWPFC19002)

	Further information
	DFG (GZ: LA1177/11-1)
	DFG (GZ: LA1177/10-1), DFG (GZ: BU3060/1-1)
	DFG (GZ: LA1177/4-4)
	DFG (GZ: LA1177/12-1)
	DFG (GZ: TH1925/2-1)
	EFSA (OC/EFSA/PRAS/2016/02)

	Further information
	EU (2013-12)
	EFSA (GA/EFSA/PRAS/2016/01)
	BMU (FKZ: UM17653010)
	EU (GAN: 733032) <a href="http://www.hbm4eu.eu">www.hbm4eu.eu</a>
	EU (LIFE16 ENV/IT/000167) <a href="http://www.life-vermeer.eu">www.life-vermeer.eu</a>
	EU (GAN: 761297) <a href="https://jaotc.eu">https://jaotc.eu</a>
	EFSA (GA/EFSA/ AFSCO/2017/01 – GA05)

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## Research on the safety of national and international food chains

Time period	Acronym	Topic
12/2013–11/2018	EFFORT	Ecology from Farm to Fork Of microbial drug Resistance and Transmission
01/2014–12/2018	Food Integrity	Ensuring the Integrity of the European Food Chain
03/2016–02/2020	MyToolBox	Safe Food and Feed through an Integrated ToolBox for Mycotoxin Management
05/2016–04/2019	Ess-B.A.R.	Food safety and resilience of food supply chains in biohazard situations
08/2017–03/2018	Goods flow field study	Project cooperation on continuous traceability of goods between the BfR and LANUV NRW
07/2016–08/2019	SAD-Zambia	<i>Staphylococcus (S.) aureus</i> in the dairy food chain in Zambia – combating foodborne disease and antimicrobial resistance in humans
01/2017–12/2019	AGINFRA+	Accelerating user-driven e-infrastructure innovation in the feed and food sector
03/2017–04/2019	Risk Assessment Tools	Risk assessment tools for the safety of global food and feed supply chains
09/2017–08/2021	EU-China-Safe	Delivering an effective, resilient and sustainable EU-China food safety partnership
06/2018–03/2019	Field study supply chains (NRW Warenströme)	Project cooperation on developing existing IT infrastructure for tracing goods between the BfR and LANUV NRW

## Nanotechnology research: Detection, toxicology, risk assessment and risk perception

Time period	Acronym	Topic
04/2014–06/2018	SolNanoTOX	Determining factors of the toxicity in intestine and liver for two similar-sized nanoparticles used in food and packaging: <i>In vitro</i> and <i>in vivo</i> investigations on intake and mechanisms involved
12/2015–11/2018	NanoToxClass	Establishing nanomaterial grouping/classification strategies according to toxicity for supporting risk assessment
05/2015–04/2018	nanoGRAVUR	Nanostructured materials – grouping approaches for occupational safety, consumer and environmental protection, and risk mitigation
09/2015–08/2018	NANoREG 2	Development and implementation of grouping and safe-by-design approaches within regulatory frameworks
05/2016–04/2019	NANOaers	Fate of aerosol-borne nanoparticles: The influence of surface-active substances on lung deposition and respiratory effects
07/2017–06/2019	NANOHEPATOX	Assessment of possible synergistic or antagonistic toxicity mechanisms during co-exposure of <i>in vitro</i> models to cerium dioxide nanoparticles and environmental chemicals/pharmaceuticals
01/2017–12/2020	ACEnano	Analytical and Characterisation Excellence in nanomaterial risk assessment: A tiered approach
01/2018–06/2021	GRACIOUS	Grouping, Read-Across, Characterisation and classification framework for regulatory risk assessment of manufactured nanomaterials and Safer design of nano-enabled products
01/2018–12/2021	NanoCommons	The European Nanotechnology Community Informatics Platform: Bridging data and disciplinary gaps for industry and regulators

	Further information
	EU (GAN: 613754) <a href="http://www.effort-against-amr.eu">www.effort-against-amr.eu</a>
	EU (GAN: 613688) <a href="https://secure.fera.defra.gov.uk/foodintegrity">https://secure.fera.defra.gov.uk/foodintegrity</a>
	EU (GAN: 678012) <a href="http://www.mytoolbox.eu">www.mytoolbox.eu</a>
	BMBF (FKZ: 13N13982) Ministry for Environment, Agriculture, Conservation and Consumer Protection of the State of North Rhine-Westphalia
	BMEL funding programme: Global Food Security BLE (Grant number: 2815DOKP04)
	EU (GAN: 731001) <a href="http://www.plus.aginfra.eu">www.plus.aginfra.eu</a>
	EFSA (GP/EFSA/AMU/2016/01)
	EU (GAN: 727864) <a href="http://www.euchinasafe.eu">www.euchinasafe.eu</a>
	Ministry for Environment, Agriculture, Conservation and Consumer Protection of the State of North Rhine-Westphalia

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	Further information
	DFG (GZ: LA3411/1-1) DFG (GZ: LA1177/9-1)
	BMBF (FKZ: 03XP0008A) <a href="http://www.nanotoxclass.eu">www.nanotoxclass.eu</a>
	BMBF (FKZ: 03XP0002D)
	EU (GAN: 646221) <a href="http://www.nanoreg2.eu">www.nanoreg2.eu</a>
	BMBF (FKZ: 03XP0064A) <a href="http://www.nanoaers.eu/index.html">www.nanoaers.eu/index.html</a>
	BMBF (FKZ: 01DH17052)
	EU (GAN: 720952) <a href="http://www.acenano-project.eu">www.acenano-project.eu</a>
	EU (GAN: 760840) <a href="http://www.h2020gracious.eu">www.h2020gracious.eu</a>
	EU (GAN: 731032) <a href="http://www.nanocommons.eu">www.nanocommons.eu</a>

## Research on functional analytics and early risk detection

Time period	Acronym	Topic
05/2017–04/2022	SafeConsumE	Safer food through changed consumer behaviour: Effective tools and products, communication strategies, education and a food safety policy reducing health burden from foodborne illnesses
04/2017–04/2020	DEMETER	Processes and systems for identifying new food risks

## International collaboration

Time period	Acronym	Topic
01/2014–12/2017	EFSA focal point	Germany's national focal point on technical and scientific matters
09/2017–08/2018	Fellow Hosting GA3	Application of data science in risk assessment and early warning
09/2017–08/2018	Fellow Hosting GA4	Identification and evaluation of potentially mutagenic and carcinogen heat-related contaminants in food
09/2017–08/2018	Fellow Hosting GA5	Risk assessment of plants and plant preparation in food
09/2017–08/2018	Fellow Hosting GA6	Risk assessment of substances used in food supplements and fortified foods
04/2017–05/2018	Data Quality	Strategic Partnership with Germany on Data Quality (Pilot project)
01/2016–12/2018	VET-Twin	Strengthening of scientific excellence of the Polish National Veterinary Research Institute in animal health and food safety
03/2017–06/2018	Endocrine disruptors	Grant for supporting EFSA in preparing guidance on endocrine disruptors
04/2018–12/2018	BMZ Safe Pork	Safer indigenous pork and healthier ethnic minorities in Vietnam by better management of parasitic food borne diseases
09/2018–08/2019	Fellow Hosting GA6	Data science in risk assessment and early warning
09/2018–08/2019	Fellow Hosting GA7	Use of novel DNA and mass spectrometry-based detection methods
09/2018–08/2019	Fellow Hosting GA1 AGES-BfR	Chemical Exposure Assessment
01/2018–06/2019	Uncertainty Workshop	Organisation of an international scientific conference: on uncertainty
02/2018–08/2018	WHO Expert Meeting	WHO Expert Meeting on the addictiveness of tobacco products

**i** **Additional information on the projects at**  
 German Federal Institute for Risk Assessment: [www.bfr.bund.de/en](http://www.bfr.bund.de/en) > **Research > Third party projects of the BfR**  
 Information System for Agriculture/Nutrition: [www.fisaonline.de](http://www.fisaonline.de) > **English**  
 BMEL research database (in German): [www.bmel-forschung.de](http://www.bmel-forschung.de)

Further information
EU (GAN: 727580) <a href="http://safeconsume.eu">http://safeconsume.eu</a>
EFSA (GP/EFSA/AFSCO/2016/01)

Further information
EFSA <a href="http://www.efsa.europa.eu/de/networks/fp.htm">www.efsa.europa.eu/de/networks/fp.htm</a>
EFSA (GP/EFSA/AFSCO/2016/02 – GA 3)
EFSA (GP/EFSA/AFSCO/2016/02 – GA 4)
EFSA (GP/EFSA/AFSCO/2016/02 – GA 5)
EFSA (GP/EFSA/AFSCO/2016/02 – GA 6)
EFSA (GP/EFSA/DATA/2017/01 – GA 04)
EU (GAN: 692131)
EFSA (GP/EFSA/PRAS/2017/01)
ILRI
EFSA (GP/EFSA/AFSCO/2017/08 – GA6)
EFSA (GP/EFSA/AFSCO/2017/08 – GA7)
EFSA (GP/EFSA/AFSCO/2017/08 – GA1)
EFSA (GP/EFSA/AMU/2016/01 – SA4)
BMG (ZMV11-2518IGW700)

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# Scientific publications

## A

Abraham, K., S. Fiack. 2018. **Stillen in Deutschland – was wissen wir?** *Bundesgesundheitsblatt* 61: 8, 909–910. <https://doi.org/10.1007/s00103-018-2787-y>

Abu Sin, M., S. Nahrgang, A. Ziegelmann, A. Clarici, S. Matz, B.-A. Tenhagen, T. Eckmanns. 2018. **Global and national Strategies against Antibiotic Resistance.** *Bundesgesundheitsblatt* 61: 5, 507–514. <https://doi.org/10.1007/s00103-018-2722-2>

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Andres, S., S. Pevny, R. Ziegenhagen, N. Bakhiya, B. Schafer, K.I. Hirsch-Ernst, A. Lampen. 2018. **Safety aspects of the use of quercetin as a dietary supplement.** *Mol Nutr Food Res* 62: 1, 1700447. <https://doi.org/10.1002/mnfr.201700447>

## B

Bakhiya, N., K. Richter, R. Ziegenhagen, K.I. Hirsch-Ernst, A. Lampen. 2018. **Nahrungsergänzungsmittel: Bedeutung in der ärztlichen Praxis.** *Dtsch Med Wochenschr* 143: 10, 722–729. <https://doi.org/10.1055/s-0043-118751>

Bartsch, N., M. Girard, L. Schneider, V. Van de Weijgert, A. Wilde, O. Kappenstein, B. Vieth, C. Hutzler, A. Luch. 2018. **Chemical stabilization of polymers: Implications for dermal exposure to additives.** *J Environ Sci Health A Tox Hazard Subst Environ Eng* 53: 5, 405–420. <https://doi.org/10.1080/10934529.2017.1412192>

Behr, A.-C., D. Lichtenstein, A. Braeuning, A. Lampen, T. Buhrke. 2018. **Perfluoroalkylated substances (PFAS) affect neither estrogen and androgen receptor activity nor steroidogenesis in human cells *in vitro*.** *Toxicol Lett* 291: 51–60. <https://doi.org/10.1016/j.toxlet.2018.03.029>

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## D

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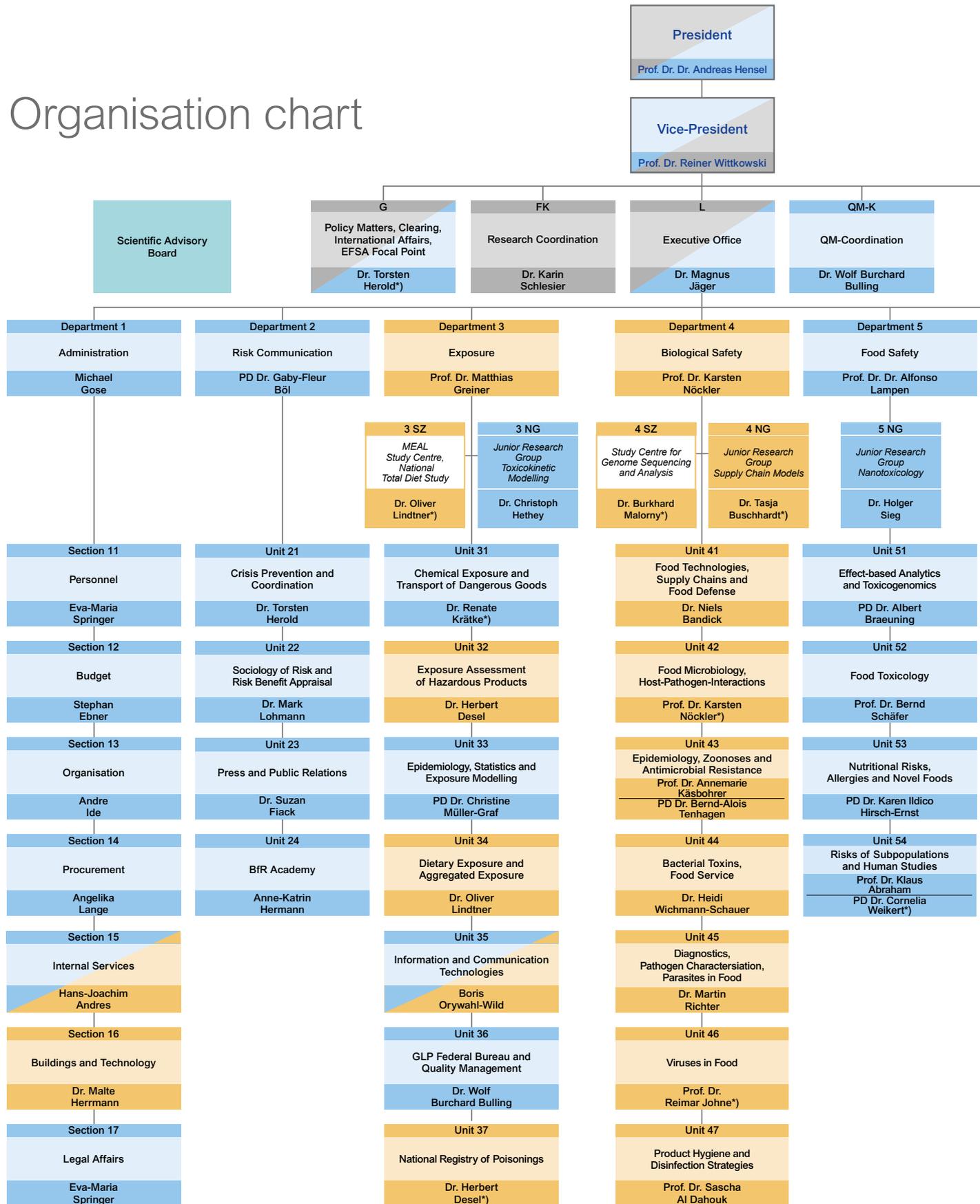
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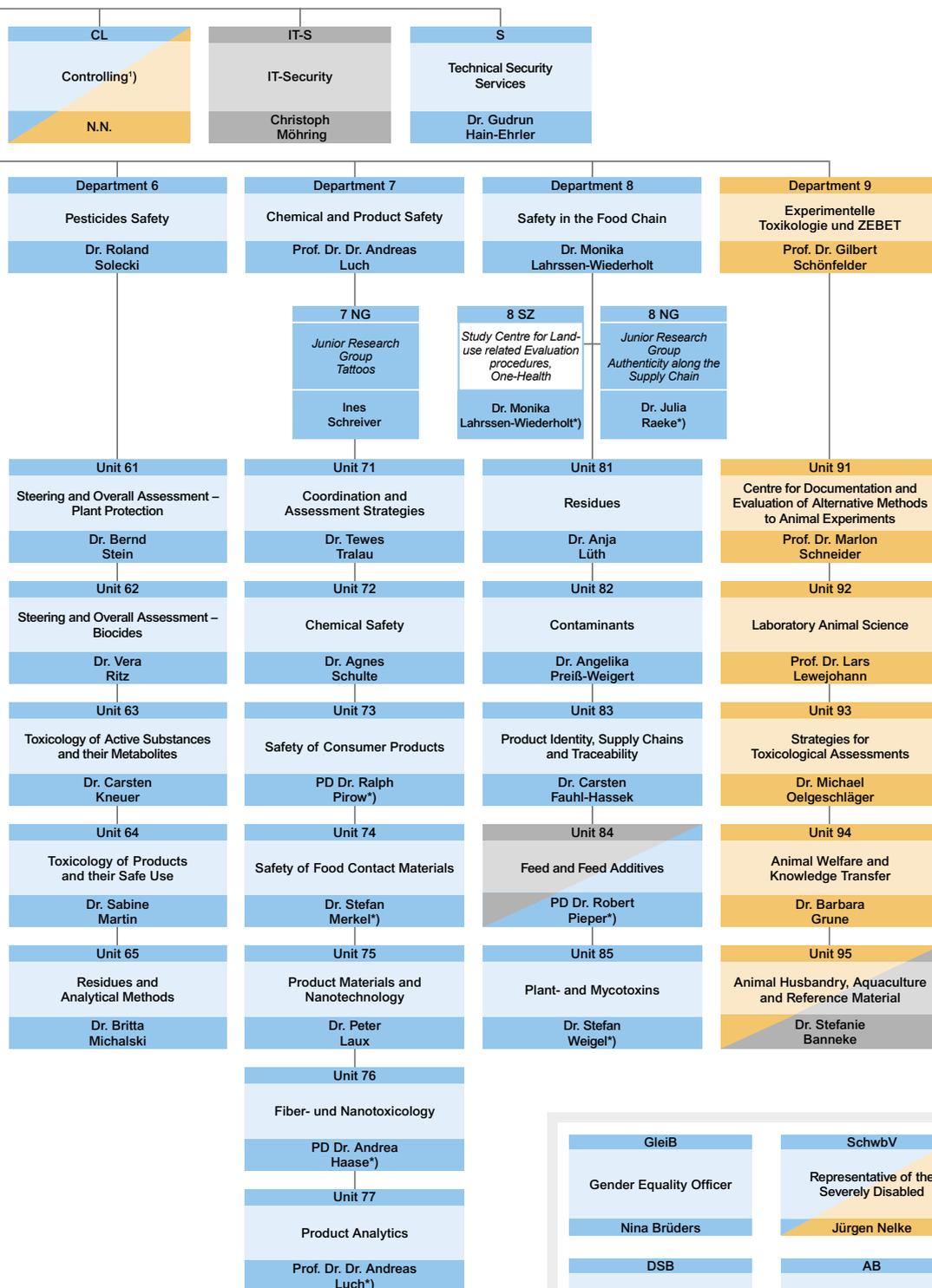
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