

IBT Strategy for years 2023-2030

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Executive Summary

A strategy is a set of activities that lead to the achievement of goals determined by the organisation. During 2022, several rounds of discussions were held with heads of laboratories on the IBT strategy

for 2023-2030. Important inputs to the IBT strategy also came from the equal opportunities audit and the internal IBT Scientific Advisory Board (SAB) assessment of half of the laboratories.

Based on all these discussions, the mission and vision of the Institute was defined. The mission of the Institute is to conduct basic research leading to the understanding of biomolecular mechanisms, which can contribute to next generation medicines and innovative biotechnologies. The vision of the Institute, i.e., the state that will emerge if the mission is successfully fulfilled, is to be a top-tier European research institution studying biomolecular mechanisms.

The increase in the size of the Institute since its establishment in 2008 has led to an increase in the complexity of internal processes that need to be codified. New needs have also emerged, particularly in management and development of human resources, which need to be met.

Basic research will remain the mainstay of the Institute's work. The specific scientific focus will continue to be determined mainly by the activities of the research laboratories, which are free to determine their topics within the Institute's mission. The essential features of IBT that we will continue to promote are the complementarity of the themes of the laboratories, which strengthens their collaboration, the top-quality equipped and operated core facilities, the work culture, and recently also reflection on the feedback from the SAB when setting the future direction of the Institute.

Further improvement of the Institute's work will require the launch of new strategic initiatives. Our basic aim is to build the Institute's competitiveness in the European context. This will be supported by a grant department with European ambitions and an HR department that will gradually introduce modern HR practices, including a comprehensive and systematic new employee orientation programme. We will consistently apply ethical principles in our conduct at work and in our scientific work based on the core values we have defined. This will include gradual building and application of Open Science principles. We will build IBT as a place we are proud of and communicate its brand to the outside world. We want to educate PhD students in a clearly defined programme complementing PhD studies at universities, and we will therefore be active in our relationship with universities. We will also offer professional development opportunities for postdocs beyond the development of their professional skills. We will continue to develop our core facilities and ensure that they provide a quality service to the Institute's research laboratories but also in a wider national and European context. In order to translate our results into practice, we will work on implementing a knowledge and technology transfer solution for a small institution.

In the context of the new strategy, new roles have been created, which will be held mainly by heads of laboratories or other senior scientists: Coordinator of the PhD Programme, Coordinator of Professional Development of Young Scientists, Science Coordinator of External Communication, Open Science Architect, Academic Liaison and Onboarding Coordinator. In these roles, researchers will be fulfilling a service to their organisation, as is common in successful institutions. There has also been a reorganisation in the administration, with the creation of two new senior positions: the HR and PR Coordinator and the Head of Grants Office. The implementation of the strategy will be overseen by a Steering Committee composed of the people responsible for each strategic initiative.



What is strategy?

In the short term, **strategy** is the set of actions that the management of an organisation undertakes to achieve the objectives set by the organisation. Since specific activities can usually only be planned for the foreseeable future, in the long term, strategy relies on defining the principles that guide the organisation in making decisions, setting priorities and allocating resources to achieve its objectives. Having a strategy is important for all organisations because it focuses leadership on common goals and identifies pathways to achieve them.

The IBT strategy describes the strategic objectives and initiatives that will lead to the achievement of the IBT objectives. Appointed staff will be responsible for their implementation.

The strategy also defines the mission and the vision of the Institute. A **mission** is the core purpose of the Institute, and a **vision** is the state we want to achieve in the future by successfully fulfilling the mission. Part of the strategy are also the **values** that we want to follow in fulfilling the mission.

Inputs for the strategy 2023-2030

Individual interviews with laboratory heads, conducted from April to June 2022, were the primary input for strategy formulation. The interviews covered the scientific focus of IBT, the ambitions of the Institute as a whole, scientific ethics and Open Science, the organisation of the Institute and administrative processes, the human resources (HR) agenda, core facilities, support for scientists in obtaining grants, cooperation with universities, cooperation with industry, technology transfer and formal and informal opportunities for meetings at IBT. Another input for the strategy were the conclusions of an equal opportunities audit conducted by Gender studies, o.p.s., which took place in the first half of 2022. An important input came from the recommendations from the IBT Scientific Advisory Board (SAB), which visited IBT in June 2022 primarily to evaluate the work and plans for future activities of six research laboratories.

The strategic initiatives that IBT management defined as priorities for the coming years based on this input were then communicated and discussed with the heads of laboratories in small groups of 3-4 people. After incorporating the feedback, they were subsequently discussed again at the September meeting of laboratory heads in Liblice.

IBT in 2022

IBT is engaged in basic molecular biology research with an emphasis on processes that impact human health. The research is conducted in 12 laboratories, which are the Laboratory of Reproductive Biology (Kateřina Komrsková), Laboratory of Ligand Engineering (Petr Malý), Laboratory of Molecular Therapy (Jiří Neužil), Laboratory of Structural Proteins (Zdeněk Lánský), Laboratory of Structural Bioinformatics of Proteins (Jiří Černý), Laboratory of Gene Expression (Mikael Kubista), Laboratory of Cell Metabolism (Kateřina Rohlenová), Laboratory of Molecular Pathogenesis (Gabriela Pavlínková), Laboratory of Structural Biology (Cyril Bařinka), Laboratory of Biomolecular Recognition (Bohdan Schneider), Laboratory of Tumour Resistance (Jaroslav Truksa) and Laboratory of Structure and Function of Biomolecules (Jan Dohnálek). IBT has three core facilities – the Molecular Structure Centre, the Service Technology Laboratory, and the Gene Core – which support the laboratories with specialised equipment and expertise.

The Institute publishes the results of its research, thus contributing to the advancement of knowledge and education. It also protects patented results that have the potential to find application in practice and contributes to their use. The staff of the Institute supervises students of several universities in



their doctoral, master's and bachelor's theses. The Institute develops international cooperation within scientific projects, organises scientific meetings and provides research infrastructure for the wider scientific community.

Since its establishment in 2008, the Institute has grown significantly. The number of employees has increased from 82 (44 FTE) in 2008 to 203 (170 FTE) as of August 31, 2022. The quality and quantity of scientific outputs are also increasing. This was reflected in the academic evaluation for 2015-2019, when IBT was evaluated as one of the best institutes of the Academy of Sciences.¹ The growth of any organisation leads to greater complexity in its internal processes. An agenda that used to be held by one person must now be divided among several people with a clear division of responsibilities and a way of communicating outputs and information. A new agenda also emerges, for example, the Institute has the ambition and possibility to be involved in large-scale projects, which may have a demanding administration, or in European infrastructures, where the Institute has to follow specific rules. All this leads to the need to systematise and codify procedures within the organisation.

In the past, the codification of procedures at IBT occurred only partially and some procedures still exist only as unwritten, albeit generally respected, rules. Although, according to the equal opportunities audit, where several groups of staff commented on the functioning of the Institute, IBT functions very well in many respects, it was recommended that IBT codify key practices in the management of the organisation. At the same time, it was recommended that the Institute introduce some new practices, particularly in the area of human resource management and development.

Scientific focus and ambitions of IBT 2023-2030

The scientific focus of the Institute will continue to be shaped mainly by the activities of the research laboratories, which have the freedom to determine their scientific themes and strategies within the Institute's mission.

The mission of the Institute is to conduct basic research leading to the understanding of biomolecular mechanisms, which can contribute to next generation medicines and innovative biotechnologies.

The Institute will support the mission by, among other things, managing the core facilities so that they contribute with instruments and expertise to the research of individual laboratories. New laboratories will be opened with a focus complementary to the current scientific topics and expertise at the Institute.

The vision of the Institute is to be a top-tier European research institution studying biomolecular **mechanisms**. Our ambition is therefore to compete, within our scientific focus, with the top institutions in Europe, not only in the Czech Republic.

Ongoing initiatives

The inputs to the strategy showed that the basic set-up of the Institute is correct and does not need to be changed. The pillars of our work are the focus on basic research, the complementarity of themes between laboratories that allows for fruitful collaboration, the state-of-the-art core facilities, the culture of the working environment and, more recently, the feedback from the SAB. We will continue to develop the Institute on these foundations.

¹ Evaluation of research and professional activity of research-oriented institutes of the Czech Academy of Sciences for the period 2015-2019. Institute of Biotechnology of the CAS, v. v. i., Commission No. 5.2



Focus on basic research

IBT will continue to focus on basic research motivated by the desire to discover the fundamental principles of biology. We will do research solely driven by potential application only when justified, and development only in exceptional cases, specifically when it involves development of our own technologies to prepare them for commercial application.

We will choose carefully which collaboration projects with companies we enter, because not all research projects with companies are in line with our mission and the mission of the Academy of Sciences. To this end, we will define principles describing which collaborations with companies the Institute will support. We will make these principles available to our employees so that they can base their decisions on them.

Complementarity of laboratories and cooperation within IBT and the BIOCEV Centre

We will continue to build an institution working on complementary scientific topics. The complementarity of our scientists' expertise enables fruitful collaboration and thus new discoveries about the functioning of biological systems and ways of influencing them in a targeted manner. Complementarity of themes will be key in the future opening of a new laboratory.

Collaboration and exchange of ideas between scientists will be supported by formal and informal meeting opportunities, both within IBT and throughout the BIOCEV Centre.

Feedback from the SAB (Scientific Advisory Board)

In 2020, we established the SAB and in 2022, the first evaluation of the work and plans of a randomly selected half of IBT research laboratories took place. The second half of the Institute will be evaluated over the next two years. The SAB will also be involved as an advisory body to the Director in other processes such as the evaluation of junior laboratories and their promotion to senior laboratories, defining topics for new laboratories, evaluating candidates for new laboratory heads, etc.

Workplace culture

According to the equal opportunities audit, in which about half of all employees commented on the functioning of the Institute, the workplace culture is good, working relationships are friendly and the working environment is pleasant. We want to maintain this culture by, among other things, describing some of the principles of good practice, which are now only unwritten rules at IBT. Some of them will be embodied in principles and recommendations, others in binding rules. They will cover topics such as workplace behaviour, non-discrimination, returning from parental leave, as well as onboarding for new employees. A large part of the implementation of these rules and principles will take place within the framework of the GEP (Gender Equality Plan).

New strategic initiatives

The new strategic initiatives address areas where we have identified gaps that are preventing us from successfully fulfilling our mission and achieving our vision. A list of the strategic initiatives and the strategic goals they are intended to achieve, and the functions responsible for implementing the initiative, is provided in Table 1. All initiatives will require an initial investment, especially investment of time, in the detailed design of the solution, setting up the implementation process and responsibilities, communication with stakeholders, etc. Subsequently, these initiatives will evolve into permanent activities that will become part of the functioning of IBT. For example, for the PhD programme initiative, it will first be necessary to comprehensively describe how the education of PhD students doing their PhD work at IBT is carried out, to design new activities for PhD students (e.g. PhD conferences) and to create a website where all the necessary information on the PhD programme will



be available. Keeping this website up to date or organising activities for PhD students will then become part of IBT's operation.

Table 1. A list of strategic initiatives, the goals they are intended to achieve and responsibilities for their implementation.

Initiative	Goals	Function responsible for implementation
European Context	 To set up evaluation and motivation processes to support the competitiveness of IBT with major European institutions in the field 	IBT Director
Ethical principles	• To ensure that the IBT staff adhere to the ethical principles for the conduct of research as well as the general ethical principles of behaviour at work	IBT Director
Human Resource Management for the 21st Century Research Institution	 To attract and retain capable people and support them in their professional development To improve the quality of research by having excellent and motivated people 	HR and PR Coordinator
Onboarding program	• To facilitate the integration of new employees into the IBT community	Onboarding Coordinator
Grant department with European ambitions	 To build a Grants Office that will help scientists navigate grant opportunities, the application process and grant management, especially for European grants 	Head of Grants Office
IBT brand	 To brand IBT as a 21st century European research institution To become more attractive to current and future employees To communicate our uniqueness to funding agencies, the country's leadership, the Czech Academy of Sciences and the public 	Science Coordinator of External Communication
IBT as a place we can be proud of	 To create an atmosphere of employee pride in IBT by promoting teamwork, communicating transparently, celebrating success and enabling social interactions 	IBT Director
PhD programme	 To increase the attractiveness of doctoral studies at IBT and thus increase the quantity and quality of candidates To increase the competencies and motivation of PhD students 	PhD Programme Coordinator
Professional development of young scientists	 To ensure that IBT is an attractive destination for top postdocs To assist young scientists at IBT in their professional development beyond training by research 	Coordinator for the Professional Development of Young Scientists
Proactive management of relations with universities	 To set up a balanced relationship in cooperation with universities 	Academic Liaison
Core facilities steering	 To ensure that the IBT core facilities provide quality services according to the needs of IBT scientists To facilitate discussions with BIOCEV core facilities (outside IBT) to meet the needs of IBT scientists 	IBT Director
Open Science and data management	 To set IBT on the path to Open Science To ensure reproducibility of results To ensure technical records on IBT intellectual property 	Open Science Architect
Knowledge and technology transfer solutions for a small institution	 To build competencies in knowledge and technology transfer in order to offer high quality services to IBT scientists 	Technology Transfer Office



European Context

We will further develop the process of evaluating senior laboratories and obtaining feedback from the Scientific Advisory Board (SAB) to increase our competitiveness at the European level. We will also involve the SAB in the process of evaluating junior laboratories, defining the scientific content of newly opened laboratories, and selecting new laboratory heads. We will codify the principles we will follow when opening new laboratories and closing the existing ones.

We will raise awareness of the importance of attestation of researchers as an important part of career growth and attestation will become part of the career development of researchers recommended by the European Charter for Researchers².

Ethical principles

During the strategy process, we also thought about the values to guide our behaviour and decisionmaking. These values are summarised in Table 2. The values will be reflected in the IBT Code of Ethics, which will define general principles of behaviour at the workplace and rules related to research work, where it will be closely linked to the principles of Open Science.

Research	Laboratories choose their research topics and strategies within the scope of the		
freedom	Institute's mission.		
Accountability	Laboratories are held accountable for the quality, quantity, and impact of their results. Our research will adhere as much as possible to the concept of Open Science, including the principle of FAIR data ³ .		
Relevance to society	Teaching, training, commercial and other practical applications of our results, public outreach and service to the scientific community are an integral part of our work because we recognise their importance to our society.		
People	We believe that excellent science relies primarily on smart, motivated and passionate people, whose professional development we actively support.		
Inclusive environment	We strive to create an environment of equal opportunities because diversity of people creates diversity of ideas.		
Collaboration	All laboratories are encouraged to collaborate locally, nationally, and internationally to keep the flow of new ideas and new impulses for our work.		
Agility	Agility ⁴ is a necessity in research because science is inherently uncertain and unpredictable. But agility is also key in management, because the research environment is unpredictable and constantly changing.		

Table 2. IBT values

Human Resource Management for the 21st Century Research Institution

We will set up an HR department, which will design and implement procedures that are consistent with modern human resources management. These include recruitment and selection processes for research, technical and administrative positions, initial training and onboarding of new employees,

² EUR 21620 - The European Charter for Researchers. The Code of Conduct for the Recruitment. European Communities, 2005. ISBN 92-894-9311-9. euraxess.ec.europa.eu/jobs/charter-code-researchers

³ Wilkinson, M., Dumontier, M., Aalbersberg, I. et al. The FAIR Guiding Principles for scientific data management and stewardship. Sci Data 3, 160018 (2016). www.nature.com/articles/sdata201618

⁴ Agility is understood here as the ability to respond flexibly, quickly and intelligently to unpredictable changes without losing sight of the overall goal. The result is an effective solution leading to fulfilment of the overall objective. The opposite of agility is a commitment to rigid practices and a focus on partial goals without regard to the context, which is subject to change. The result is an ineffective solution that may come too late.



professional development, career management, evaluation and feedback, employee satisfaction and needs surveys, as well as streamlining administrative processes. An important task of HR will be the implementation of the Gender Equality Plan (GEP) and its agile adaptation to the current needs of the organisation. The HR Department will also lead the process of obtaining and retaining the HR Award, in which IBT will commit to the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers.⁵

Onboarding program

We will define an onboarding programme to enable new employees to quickly "get on board" at IBT. The programme will also allow the HR department to track whether new employees complete the required training. The onboarding programme will include all trainings required by law, job-specific trainings, trainings on key processes at IBT, and training on intellectual property. During the onboarding, the new employees will get to know the management of IBT and the heads of the laboratories, they will get familiar with the BIOCEV centre, the services offered by the core facilities and important administrative processes.

Grants Office with European ambitions

The Grants department will be strengthened to proactively identify suitable grant opportunities for individual laboratories and scientists and support them in obtaining national and European grants. European calls have different requirements for the type of research and the structure of project applications compared to national calls. The proposed projects tend to place more emphasis on the ambition of the research, interdisciplinarity, the use of state-of-the-art techniques and the possibility of further use of the results. The application also needs to show that the applicant has thought about the ethical aspects of their research and has considered how to meet the principles of Open Science. In the future, the Grants Office should not only provide applicants with an overview of the individual steps of the application process, but also give feedback on the grant application itself, especially for European grants.

IBT brand

We agreed that it is necessary to actively work on the image of IBT, because the current one does not correspond to the quality of the Institute. We should communicate the IBT brand to the outside world - an excellent scientific institution with European ambitions, which cares for its staff and supports their professional development while expecting them to be responsible engagement. We will use modern channels of communication that are common in the scientific environment.

One proud IBT

We will strive to make IBT an institution we are proud of across all employee groups. The IBT management and the heads of the research laboratories will encourage the networking of people and ideas through formal and informal events. The management will transparently communicate the rules and principles and changes to them and inform the IBT community about the achievements of the Institute and individual colleagues.

PhD programme

As part of the PhD programme initiative, we will provide a comprehensive description of how admissions to degree programmes at universities take place and what role IBT and the university play in the education of PhD students who do their PhD work at IBT. We will propose new activities for PhD students, e.g. PhD conferences or a student club. We will also consider the introduction of a scientific

⁵ EUR 21620 - The European Charter for Researchers. The Code of Conduct for the Recruitment. European Communities, 2005. ISBN 92-894-9311-9. euraxess.ec.europa.eu/jobs/charter-code-researchers



advisory board for each student and student mentors. We will create and maintain a website where all the necessary information for the PhD programme will be available.

The content of the initiative will reflect the forthcoming changes to the Higher Education Act.

Professional development of young scientists

The initiative targets mainly postdoctoral fellows and other young scientists. A survey conducted as part of an equal opportunities audit showed that this group is dissatisfied with the opportunities for further training and professional growth at IBT. IBT will give young scientists the opportunity to build a network of scientific contacts and develop their scientific independence and leadership skills. We will organise development activities for this group, such as seminars, workshops or panel discussions on topics related to careers for young people in science, as well as on building soft skills that are also beneficial for postdocs who decide to pursue careers outside of the scientific environment. We will also support the creation of a postdoc association, which will give young people the chance to organise events according to their own interests, while at the same time the organizational work itself will allow them to develop competencies such as planning, budgeting, negotiating, organising, etc.

Active management of relations with universities

We have to be proactive in our relationship with universities because our work is closely linked to universities, especially because IBT is an external training institute and PhD students are officially admitted to the study programme by the subject-area boards of the universities and graduate at the university. It is necessary to know the current processes associated with the recruitment of PhD students and the completion of their PhD studies, including the length and requirements for successful completion, according to the type of programme and university. This information needs to be communicated within IBT. There is also a need to coordinate activities related to the PhD programme, but also with students who are working on their master's and bachelor's theses under the guidance of an external supervisor from IBT. It is necessary to list and actively present the topics of undergraduate and postgraduate theses, as well as the possibilities of teaching by IBT science staff at universities. At the same time, it is necessary to support the interest of students from abroad who can be directed to study at Czech universities based on existing valid memoranda between universities. It is also desirable to initiate new inter-university memoranda that will support IBT as an external training centre and increase its visibility.

Last but not least, it is necessary to monitor the planned amendments to the Higher Education Act, especially the changes that will affect undergraduate and graduate studies, and to actively engage in the discussion of these changes.

Core Facilities Steering

A Committee for Core Facilities (CCF) will be established as an advisory body to the Director of IBT to continuously collect input on core facilities and other shared research infrastructure and to propose and oversee the implementation of necessary changes. The Committee will also moderate a discussion with the BIOCEV core facilities.





Figure 1. Life cycle of data. Adapted from ELIXIR Research Data Management Kit.

Open science and data management

The road to Open science will be long and challenging. At IBT, we will need to define how we handle data throughout its life cycle (see. Figure 1), i.e. from planning what experiments will be carried out and what data will be generated, to collecting, processing, analysing and storing them, to sharing them with the scientific community outside IBT so that the data can be used by others. In order to achieve this, we will have to, among other things, map what type of data is generated at IBT, create or adopt a classification of the data, and design ways of recording and storing the data so that it can be used in the future by other scientists than the originators.

Knowledge and technology transfer solutions for a small institution

The Technology Transfer Office (TTO) will support for scientists in the transfer of their results into practice by actively building the necessary competencies of the TTO and the scientists themselves. The TTO shall ensure that IBT has defined policies on the management of intellectual property and principles of cooperation with companies, and that these are transparently communicated to all its staff. IBT will also be actively involved in the development of the Centre for Technology Transfer of the Academy of Sciences (CeTTAV).

New functions as a service to the institution ("service")

As part of the strategy, some new roles have been defined to be filled by some laboratory heads and possibly senior scientists. These functions are PhD Programme Coordinator, Coordinator for the Professional Development of Young Scientists, Academic Liaison, Science Coordinator of External Communication, Open Science Architect, and Onboarding Coordinator. A Committee for Core Facilities (CCF) was also established. The work in these functions and in the CCF will become a service component of the job of selected laboratory heads or other senior scientists. We agreed on the establishment of these service functions, which are common in successful institutions abroad, during our discussions on the Institute's strategy. We will adopt from abroad this practice of service to the organisation as an integral part of the job description of researcher, as is also recommended by the European Commission in the European Charter for Researchers.⁶

Organisational changes

One of the tools for strategy implementation is organisational change. In addition to the establishment of new positions, mainly filled by laboratory heads, there is also an organizational change in the

⁶ euraxess.ec.europa.eu/jobs/charter/european-charter



Administration department. The position of HR and PR Coordinator was created, which reports directly to the head of the Administration and will coordinate all HR and PR related agenda. There will also be a Grants Office, the head of which will report to the Head of Administration. There will be a total of 3 people in the Grants Office and an additional project manager position will open in the first half of 2023.

Strategy implementation steering

Any implementation, if it is to be successful, must be managed. The implementation of the IBT Strategy will be managed by the Steering Committee. The Committee will meet regularly once a month. It will be led by the IBT Director, as the main sponsor of the strategy implementation. The members will include the PhD Programme Coordinator, the Young Scientists Professional Development Coordinator, the Academic Liaison, the Science Coordinator of External Communication, the Open Science Architect, the HR and PR Coordinator, the Head of Grants Office and the Head of Administration. The preparation of the Steering Committee meeting, its course, as well as the whole implementation process will be managed by the Strategy Implementation Coordinator. Laboratory heads will be regularly informed about the implementation progress at the laboratory heads' meeting. The IBT Council will be regularly informed as well.