



UPPSALA
UNIVERSITET

TEKNAT 2020/31

Vision and goals

Faculty of Science and Technology

Adopted by the Faculty Board 11 May 2021

Table of Contents

Foreword	3
Introduction and clarifications.....	4
Initial position.....	4
1. Vision for the Faculty of Science and Technology	5
2. Mission.....	5
3. Culture and approach	5
4. Goals for the Faculty of Science and Technology	6
4.1 Goals related to research.....	6
Goal 1: Our research shall be further developed based on recognized excellence.....	6
Goal 2: Broad research initiatives shall be developed proactively.....	6
Goal 3: Research funding shall be broadened	6
Goal 4: Access to advanced research infrastructure shall be ensured	6
Goal 5: We shall adapt research support to current needs	6
4.2 Goals related to education.....	7
Goal 1: Our education shall be further developed based on recognised excellence and demand.....	7
Goal 2: Our education shall be linked to research.....	7
Goal 3: Our education shall be linked to working life	7
Goal 4: We shall ensure pedagogical development.....	7
Goal 5: We shall offer lifelong learning.....	7
4.3 Goals related to cooperation and collaboration.....	8
Goal 1: Our cooperation internally and with other higher education institutions shall be developed	8
Goal 2: Our collaboration with external actors shall be developed.....	8
Goal 3: Guidelines on collaboration qualification assessment shall be developed	8
4.4 Goals related to the faculty as workplace	8
Goal 1: A good working environment with equal opportunities shall be offered	8
Goal 2: Recruitment shall target prominent research and teaching staff.....	9
Goal 3: Good career opportunities shall be available for our research and teaching staff	9
4.5 Goals related to internationalization	9
Goal 1: The forms of internationalization shall be further developed.....	9
Goal 2: Conditions for international employees and students shall be improved	9
Goal 3: Language barriers shall be reduced.....	10
4.6 Goals related to the faculty in the world	10
Goal 1: The Faculty shall keep pace with relevant global and local goals.....	10
Goal 2: The Faculty shall take advantage of the opportunities of digitalization	10
4.7 Goals related to the future and continuous development	10
Goal 1: We shall have a current analysis of the surrounding world.....	10
Goal 2: We shall regularly reassess our activities	10

Foreword

Through this document, the Faculty of Science and Technology establishes its vision and goals for the coming years. It may then be interesting to briefly shift perspectives and look back in time: What has the faculty prioritized in recent years, and how well has it succeeded? Some examples can be highlighted:

One long-standing equal opportunities issue has been to attract more women to the faculty. Several initiatives have been taken targeting different groups, and in 2020, 46 per cent of students admitted to a study programme were women, compared with 40 per cent in 2014. As regards first-time applicants, the proportion of women is also close to 50 per cent for the entire faculty. Of the professors who took positions in 2018-20, 39 per cent were women. However, in 2021, the proportion of female professors is still only 23 per cent.

Uppsala University has long been successful in the natural sciences, but we have been overlooked by important actors regarding our extensive activities in technology education and research. Increased investment in the visibility of technology, among other things through establishment of *Upptech*, has made our technology research and education more visible. This effort, together with new engineering programmes, has increased our share of first-time applicants in Sweden. For instance, for Master's degree in engineering programmes, our share increased from 5 per cent (2014) to 8 per cent (2020).

To continue developing our research in science and technology, the faculty is dependent on external research funding. During recent years, we have made a conscious effort to approach funding agencies with which we have previously been less successful. The faculty has maintained its strong position regarding funding from, e.g., the Swedish Research Council, with almost 20 per cent of the total number of project grants in science and technology in Sweden going to Uppsala University. At the same time, there is a positive trend in support from other financiers that we have approached in new ways.

As a final example, investments in fee-paying students can be mentioned. Here, the faculty set a goal of 1,000 fee-paying students by 2025, the reason being to promote more mixed student groups, increased internationalization at home, and the development of new Master's programmes in areas where we do cutting-edge research. In 2021, we are more than halfway to this goal, from a level of about 100 students in 2014. One future challenge will be to maintain high-quality instruction when both programme offerings and volumes increase, and students with new expectations and needs are admitted.

After this brief retrospective, the faculty's vision and goals for the next few years are presented below. The faculty is well positioned to achieve its goals.

Johan Tysk, Vice-rector

“L'avenir est un présent que nous fait le passé” (André Malraux)

Introduction and clarifications

The vision for the faculty is described below, followed by the various goals linked to this vision, also taking into account the university's development goals. Starting from the faculty's vision means there is no clear one-to-one relation between any of the university's six overall and partly overlapping development goals and the faculty's own goals. Rather, most of the faculty's goals contribute to several of the university's development goals and strategic priorities, as formulated in Uppsala University's Mission, Goals and Strategies (UFV 2018/641).

The Faculty Board does not wish to reduce its freedom of action and ability to adapt the path towards different goals by also specifying detailed efforts towards each goal below. The intention is to make the necessary concrete decisions in the annual operational plans.

Detailed indicators and target figures might also take the focus away from the actual goals. Indicators are therefore used sparingly in the present document and are, where deemed relevant, mainly formulated in the annual operational plans.

Order of priority, actions, resource allocation, target figures et cetera shall therefore be developed in the context of semi-annual departmental dialogues, as well as in the work of the advisory committees and educational boards. Details will then be determined in the operational plans at the faculty and departmental levels.

In addition to the annual follow-ups of the goals below, the intention is to review and, if necessary, revise the faculty's goals every three years, beginning in 2024. The first major review is scheduled for 2026. For broader goals, it may be necessary to conduct specific evaluations. The goals described below are deemed to be relevant throughout, or for part of, the period 2022-2027.

Initial position

In 2021, the faculty can look back on a tumultuous period. Especially during 2020, the opportunities and difficulties of digitalization linked to the pandemic became clear and changed the conditions for education, research, and collaborations. Many employees had to use a variety of new tools and methods to perform their work tasks and do so quickly, unexpectedly, and often while pressed for time.

In addition to these changes on an individual level, other changes have occurred in several ways. New study programmes, research programmes, and collaborations have been formed, but national initiatives and external developments also affect us. This may often entail choosing between new initiatives and continuing or terminating ongoing operations.

Technology, science, and mathematics are of central importance to societal development and constitute the foundation of society's investment in the university system, which in return produces new knowledge and educated individuals. Academic freedom in research is important, because it enables unexpected discoveries that renew our worldview or lay the foundation for development of new technologies: Big breakthroughs result in major societal benefits over the long term.

1. Vision for the Faculty of Science and Technology

New knowledge - new applications - new competence

2. Mission

We shall carry out research and offer education of the highest international quality to expand our knowledge base and to meet humanity's current needs, without jeopardizing the environment or future generations' opportunities to meet their needs.

We shall conduct both basic and applied research aimed at achieving constant improvement and making new breakthroughs.

The courses offered by the faculty shall be linked to our complete university's outstanding research; they shall be based on modern pedagogical evidence, promote students' personal development and take into account the needs of society.

The faculty shall be an attractive workplace for employees and students, and an attractive partner for collaborations with companies, organizations, society and other educational institutions, both in Sweden and abroad.

3. Culture and approach

The academic environment offers considerable scope for individuals to develop and control their work. This freedom brings with it the responsibility to collaborate in a collegial manner. Managers and leaders at different levels within the faculty are strong cultural role models. Aiming for accordance between words and actions, the faculty recommends that all employees and students take the following approaches:

Decentralized decision-making – the collegial way of governing a knowledge-based organization.

Openness – regular and open communication for transparent and well-grounded decisions.

Mutual acceptance of responsibility and helpfulness – both in line roles and in collegial positions of trust.

Confidence – in each other in our various roles, and an awareness of what types of competence and support are available within the university.

Equal opportunities – a quality issue.

Appreciation – taking pleasure from and in one another's efforts.

Pride – in being a part of Uppsala University.

4. Goals for the Faculty of Science and Technology

Below are the faculty's different goals connected to its vision. Concrete decisions regarding the objectives will be taken in the annual operational plans. The goals described below are deemed to be relevant throughout, or for part of, the period 2022-2027 and are not listed in order of priority.

4.1 Goals related to research

"We shall conduct both basic and applied research aimed at achieving constant improvement and making new breakthroughs"

Indicators followed over time (more can be determined in the operational plans):

- External funding obtained, in total and from different funding agencies, etc.

Goal 1: Our research shall be further developed based on recognized excellence

Both curiosity-driven basic research and applied research guided by societal challenges shall be further developed and characterized by originality and impact. This is also an important prerequisite for undergraduate education, postgraduate education, and collaboration at a university offering a broad range of subjects.

Goal 2: Broad research initiatives shall be developed proactively

The faculty shall gather successful research in different subjects around areas that are of major social relevance and in great demand, and where increased interaction benefits us as a whole. New ventures are evolving gradually. We shall build excellent research environments that can take on major societal challenges and, to that end, receive external funding. Through joint action with our collaborators, we are prepared to actively match initiatives from various financiers.

Goal 3: Research funding shall be broadened

We shall retain our successful position in obtaining funding for curiosity-driven basic research. Regarding more applied research, we in some cases have less support than similar higher education institutions, and here we shall strengthen our position. By supporting successful research environments, our prerequisites for achieving greater success in various calls for research funding applications shall be improved.

Goal 4: Access to advanced research infrastructure shall be ensured

The faculty is dependent on research infrastructures and participates in developing and operating many of them. It is therefore important to address infrastructure-related issues. Processes for prioritizing and co-financing shall be clarified.

Goal 5: We shall adapt research support to current needs

To adapt research support to our needs, these needs and various forms of research support, both administratively and experimentally, shall be analysed and are being developed at the departmental and faculty levels.

4.2 Goals related to education

“The courses offered by the faculty shall be linked to our complete university's outstanding research; they shall be based on modern pedagogical evidence, promote students' personal development and take into account the needs of society”

Indicators followed over time (more can be determined in the operational plans):

- Indicators (which vary over time) linked to our evaluation model
- Applicants per place and student completion for different student categories
- Number of courses and course participants in lifelong learning

Goal 1: Our education shall be further developed based on recognised excellence and demand

Our programmes and courses are relevant and of a high international standard, which is linked to, among other things, a high ratio of applicants per place and good student completion. The courses offer deep knowledge and build analytical skills. There is a good selection of courses to choose from. Broadening participation and having mixed student groups are important for various reasons. Good administrative and technical support for our education shall be ensured.

Goal 2: Our education shall be linked to research

The education shall be based on a scientific foundation with high subject topicality. The research basis includes students gaining insight into research results, research processes, and methodology. Research infrastructures are increasingly being used in education and contribute to further strengthening the link.

Goal 3: Our education shall be linked to working life

Links to research and professional life are appealing to our students and doctoral students. More forums shall be created and collaboration developed so as to broaden the connection between professional life and higher education. Adjunct employees, as well as reverse co-opting, help to enhance professional life connections. Alumni activities are strengthened as part of this.

Goal 4: We shall ensure pedagogical development

Good conditions exist for competence development in subjects as well as in teaching and learning. Strategies are in place that allow teachers to participate in competence development. Research on subject didactics is being conducted, inter alia, to provide a basis for long-term pedagogical development. We shall build on experiences of and further develop digital tools in teaching, as well as methods for flexible and individual learning.

Goal 5: We shall offer lifelong learning

The faculty shall achieve the objectives of lifelong learning by inventorying knowledge needs in different thematic areas, as well as by establishing processes to ensure ongoing matching of needs with our lifelong learning offerings.

4.3 Goals related to cooperation and collaboration

“The faculty shall be an attractive partner for collaborations with companies, organizations, society and other educational institutions, both in Sweden and abroad”

Indicators followed over time (more can be determined in the operational plans):

- Grants and revenues linked to collaborative activities

Goal 1: Our cooperation internally and with other higher education institutions shall be developed

Incentives and conditions for internal cooperation shall be improved, as well as information flows between different campus areas. Support forms shall be developed for horizontal themes, the aim being to implement and coordinate more interdisciplinary projects. We form projects together with other higher education institutions and participate in the creation of networks through coordinated and proactive efforts.

Goal 2: Our collaboration with external actors shall be developed

The faculty builds collaborative relationships and partnerships with industry, authorities, schools, and other parts of society. This collaboration has clear objectives and goals, where content and how relationships should be used and prioritized are stated. Utility in the form of popular science and adult education shall be further developed. Collaboration activities shall take place in regions where we operate: Uppsala and Gotland. The necessary support functions are available to develop forms of collaboration. Alumni play a more prominent role in collaboration and contribute to quality development.

Goal 3: Guidelines on collaboration qualification assessment shall be developed

The skill of the employees in collaboration is also important for the quality of education and research. Collaboration skills are a natural part of scientific and pedagogical skills, and tools for documenting and evaluating this shall be developed and used.

4.4 Goals related to the faculty as workplace

“The faculty shall be an attractive workplace for employees and students”

Indicators followed over time (more can be determined in the operational plans):

- Number of applicants for teaching positions, including gender distribution among applicants and those employed
- Time required to recruit employees for different types of positions

Goal 1: A good working environment with equal opportunities shall be offered

Having a good physical and psychosocial work environment within the faculty is a prerequisite for conducting successful research, education, and support; it also helps to reduced illness absence. Equal opportunities shall permeate all activities. Sufficient time and resources exist for developing good employeeship, individual skills, as well as education and research.

Goal 2: Recruitment shall target prominent research and teaching staff

The recruitment processes at the faculty and departments identify strengths and areas for development. Our efficient handling of recruitment cases provides an important competitive advantage. Calls attract many and strong applicants, and the proportion with teacher positions is increasing. Broad recruitment and equality are a matter of course. Package offerings, which applicants often expect, shall be developed.

Goal 3: Good career opportunities shall be available for our research and teaching staff

Good terms and individual career planning shall be offered. Appreciation shall be shown to already employed teachers and researchers who perform successfully and produce good results. We shall be the best starting place for doctoral students and younger researchers, and we shall support their opportunities for continued academic or other careers. Tools that facilitate collaboration between individuals and groups in building successful environments shall be available.

4.5 Goals related to internationalization

“We shall carry out research and offer education of the highest international quality [...] The faculty shall be an attractive workplace for employees and students”

Indicators followed over time (more can be determined in the operational plans):

- The proportion of international exchange students and free movers, doctoral students, teachers, and researchers at the faculty

Goal 1: The forms of internationalization shall be further developed

Our current global society presupposes that the faculty's activities are also globally oriented, with a diversity of values and conditions. Mobility gives the individual opportunities to visit top international research or education environments. For students and employees, internationalization at home is important. Service and support functions shall be organized and dimensioned to meet an increase in incoming and outgoing students, doctoral students, and staff. Sustainability aspects shall be included in our development of the forms of internationalization.

Goal 2: Conditions for international employees and students shall be improved

The international experiences of employees and students shall be used to contribute to high quality in research and education. The reception and introduction of younger researchers with an international background shall be given increased attention. International doctoral students and students shall be introduced to the Swedish labour market as part of their education. International students shall be given the same conditions as Swedish students to identify and carry out external degree projects.

Goal 3: Language barriers shall be reduced

To make full use of international perspectives and experiences, language barriers shall be reduced. Employees, doctoral students, and students shall be able to work and participate at the university on equal terms, regardless of whether they understand Swedish. This includes using English as a language of work and instruction. At the same time, it is important that teaching and training in Swedish be offered and encouraged for all employees with a first language other than Swedish. Knowledge of Swedish is important for teaching at the undergraduate level, integration, and being able to work and live in Sweden on equal terms.

4.6 Goals related to the faculty in the world

“We shall carry out research and offer education of the highest international quality to expand our knowledge base and to meet humanity's current needs, without jeopardizing the environment or future generations' opportunities to meet their needs”

Goal 1: The Faculty shall keep pace with relevant global and local goals

Goals for addressing various important societal challenges have been set outside the university, locally as well as globally. We shall relate to these goals where relevant, link them to our operations, and take them into account in our further development. The university and its alumni are expected to drive the development of a sustainable society.

Goal 2: The Faculty shall take advantage of the opportunities of digitalization

We benefit from the experience of working online and use digitalization to be more efficient in our work, both in core and support activities. This is also linked to sustainability and environmental impact.

4.7 Goals related to the future and continuous development

The Stone Age did not end for the lack of stone

Goal 1: We shall have a current analysis of the surrounding world

As a basis for development and continuous improvement, we shall have an up-to-date picture of the world and follow developments in the community. When we make changes, there shall be a clear link to conditions in the surrounding world, when relevant.

Goal 2: We shall regularly reassess our activities

Education, research, and collaboration develop over time. We shall prepare for the needs and expectations of future students, employees and stakeholders and can meet these needs to remain relevant. We shall set clear priorities and even phase out operations. The strong areas in, for instance, research that we have identified shall be highlighted and developed in different contexts.