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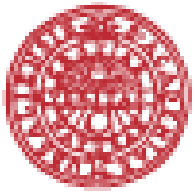

UPPSALA
UNIVERSITET

Annual Report 2020

Department of Information Technology

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Introduction

The Department of Information Technology conducts education, research and collaboration in the fields of computer science and information technology. These operations are conducted across five divisions: Scientific Computing, Computing Science, Computer Systems, Systems and Control, and Visual Information and Interaction.

In addition to conducting research, education and collaborations within the various divisions, the department also hosts the Swedish National Infrastructure for Computing (SNIC), which coordinates national resources to make high-performance computing resources, storage capacity and advanced user support available to Swedish researchers from local centres at six Swedish universities. The department also hosts the Uppsala Multidisciplinary Centre for Advanced Computational Science (UPPMAX), the local Uppsala SNIC centre. Last, but by no means least, the department hosts the EuroCC National Competence Centre Sweden (ENCCS), the Swedish hub for high-performance computing within EuroCC. SNIC, UPPMAX and ENCCS all have separate assignments and publish their own annual reports, hence the absence of detailed description of their activities here.

During 2020, the COVID-19 pandemic had significant consequences for the department's operations. For many of us, working from home and concerns for one's own health and the health of loved ones created a taxing psychosocial work environment, while hastily arranged home offices at kitchen tables and the like also caused problems in terms of the physical work environment. The department made strenuous efforts to find solutions to improve both the psychosocial and physical work environment, something you can read more about in the section on systematic work environment management.

Having seemed exotic in March, by late autumn working digitally over zoom had begun to feel like the new normal. Meetings, lectures, research discussions, etc. may not have been as satisfactory as when meeting in person but, somehow, we contrived to make it work. And let us not forget that during the year we have started two new research programmes, in Artificial Intelligence and Computing Education Research, as well as two new international master's programmes: Data Science; and Image Analysis and Machine Learning. This and much more can be found in our Annual Report 2020, which is part of the IT Department's systematic work with goals, strategies and monitoring.

First and second-cycle education

Follow-up of Action Plan 2020

During 2020, Tobias Wrigstad was the department's head of education. The department's education activities have been managed by a group comprised of directors of studies, which meets on a weekly basis chaired by the head of education. Teaching at each department has been led by a separate director of studies. At the start of the year, the directors of studies in the group were: Stefan Pålsson, responsible for courses at the Division of Scientific Computing; Mats Daniels, responsible for courses at the Division of Computer Systems; Matteo Magnani, responsible for courses at the Division of Computing Science; Hans Rosth, responsible for courses at the Division of Systems and Control; and Filip Malmberg, responsible for courses at the Division of Visual Information and Interaction. Filip Malmberg assumed responsibility from Hans Rosth for courses at the Division of Systems and Control in early spring. From October, Jarmo Rantakokko was phased in as replacement for Stefan Pålsson and Faouzi Atig for Mats Daniels. Mats and Stefan stepped down from their roles on 31 December.

The department's first and second-cycle education organisation is currently in transition towards a more centralised body with more formal procedures. Some bugs have arisen during the transitional period between the old system, in which each department is responsible for and funds its own courses, and the new, in which education is managed centrally and courses are no longer 'owned' by a division. A preliminary evaluation of the new organisation was conducted during 2020 and a few course corrections made for 2021.

During 2020, the department's first and second-cycle operations were dominated by pandemic-related measures. The department moved quickly to transfer all teaching online and by the spring plans were already underway to continue digital teaching during the autumn semester, providing teaching staff with rules of conduct that would not be subject to change at short notice, as was the case in March 2020. Information was gathered regarding which courses required on-campus resources and how such resources could be offered online (e.g., how students could be given remote access to software on specific computers in specific computer labs) and a system was set up for applying for dispensation for teaching, in order to gain greater control over the number of people moving around the premises at Polacksbacken. In conjunction with this, the department accepted an increased assignment on several courses to meet increased societal needs. Freely available teaching materials were also compiled for the benefit of those who might need them.

A scientific approach to teaching and learning and student-centred teaching and versatile active learning

Lively collegial discussion has taken place regarding methods for moving teaching online without compromising on quality and legal certainty. At the end of Period 4, a well-attended Zoom seminar was arranged to gather experiences gained from teaching during the period. Due to exhaustion and understaffing, the regular lunchtime academic teaching seminar has

been cancelled. In hindsight, it is apparent that many activities have been postponed in the hope that the pandemic would soon be over.

Two TUFF projects were completed during 2020 and another one has been greenlit for 2021. Two of the department's TUFF projects were presented at the TUK 2021 Conference on Higher Education Pedagogy organised by the Faculty of Science and Technology. One of the TUFF projects was extended as certain changes were inappropriate for implementation during 2020 due to the pandemic.

Subject didactics research is conducted at the department and during 2020 a separate research programme was established for this activity. Subject didactics research encompasses the study of our own teaching environment, as well as other environments and structures through collaborations. As in 2018 and 2019, during 2020 studies were ongoing regarding the development of students' relationships to the subject during study programmes, as well as learning, progression and examination in competency-based education within project courses. The dissemination of knowledge and insights has proved significantly more difficult during 2020 as teachers' opportunities to attend information meetings and the like have been severely curtailed.

Continuous development of study programmes and courses

Course evaluations were conducted for all courses and course reports prepared. This was not however particularly successful as many teachers are unclear as to who the course reports are being written for and how they are to be used. During 2020, a new model was discussed to facilitate and clarify this work and an online service for the purpose was developed by students as part of a project; however, the new model and online service have yet to be launched and have been postponed until 2021.

Special investments

The plan for 2020 was to allocate development funds for new courses within newly established programmes and to contribute with additional working hours on the part of programme coordinators to the new programmes. This proved to be the case and extra resources were committed to reviewing applications, etc. Extra working hours were also set aside for teaching staff involved in programme evaluations, also according to plan.

Individual professional development for university teachers

Individual skills development is planned in consultation with the director of studies in conjunction with performance reviews. This applies to both the scope and variation of teaching experience, as well as formal training. Particular emphasis is placed on planning for doctoral students and staff in career-development positions. Among other things, this includes the qualification programme for assistant senior lecturers.

Basis for future focus areas in evaluating first and second-cycle study programmes and courses

Accessible and fit-for-purpose study environments

Definition: that students are provided with a good physical and psychosocial work environment.

At present, the department's energy is focused on acute measures, i.e. the study environment for students during the pandemic. While we do not currently have any of our own data on which to base this work, we intend to collect this during the spring. In this regard, there will be a specific focus on international master's students, some of whom are still in their homelands following lectures remotely with teachers and fellow students who they have never met in person. Meanwhile, others are alone and isolated in Uppsala, some fee-paying students living with the stress of being unable to pay for their studies in a time of financial difficulties. Various support measures are being discussed in different programmes in order to ensure that these students are doing as well as possible given the circumstances.

We are well aware that many students are longing to return to campus, but we also know that many appreciate the opportunity to attend lectures, etc. via links and would be glad to do so regardless of the national public health situation. Our hope is that the planned data collection will guide us prior to the return to on-campus teaching in terms of which digital components might be worth retaining. In this regard, there are both study environment and equal opportunity aspects to be considered.

As part of efforts to ensure that interactions between students and teachers maintain a high level of quality, the department has invested in high-quality audio-visual equipment for individual teachers for digital lectures and meetings.

Gender equality and equal opportunities

Definition: that students are provided with the best conditions for learning regardless of sex, transgender identity or expression, ethnicity, religion or other belief, disability, sexual orientation or age.

The department has for many years conducted successful work to promote gender equality and equal opportunities, driven by a robust Equal Opportunities Group with its own budget that is regularly used to fund applications from teachers and researchers to reinforce equal opportunities. All divisions are represented in the group, as are the department's administrative and technical staff, doctoral students and students. Projects funded by the Equal Opportunities Group have focused on issues such as the experiences of different student groups of programming teaching, etc. The group has also organised seminars on subjects such as how job announcements should be worded so that different groups feel equally invited to apply, and countering bias in recruitment processes. The group has also organised seminars with Ulrike Schnaas of the Division for Quality Enhancement, Academic Teaching and Learning regarding the gender aspects of doctoral supervision, as well as lectures on diversity and discrimination as part of introductory courses at first and second cycle at the department. A collaborative project was also recently initiated with the Uppsala Union of Engineering and Science Students (UTN) regarding the design of projects with broad student groups with diverse backgrounds and skill sets, etc.

The department has a chapter of ACM Women (ACM-W), although its level of activity has fluctuated over the years depending on the level of commitment from doctoral students and students. The chapter has organised everything from programming meetings with a dozen attendees to international conferences focused on equal opportunities. The department has supported involvement in ACM-W both financially and organisationally.

The number of female teachers and researchers at the department remains generally low, even if some divisions have a more gender-balanced staff than others. During recruitment, the department places great emphasis on identifying and encouraging applicants of the underrepresented gender, maintaining ongoing contact to ensure that they do not fall away during the long administration process.

Since 2018 – with the exception of 2020, due to the pandemic – teaching assistants and doctoral students attend a short training course with a strong emphasis on equal opportunities. This training course has been developed with considerable student influence.

Research

This section describes department-wide research development activities and how research funds are used and reviews external research grants. The report also contains a summary of how appropriations and external funding are used to finance various categories of staff.

Department-wide research development

The Department of Information Technology's Professors and Programme Directors Group (PAP Group) meets approximately once a month during term time under the chairpersonship of the head of research. Among other things, the PAP Group is tasked with drafting research-related issues at departmental level.

During 2020, the members of the group were:

- Professor Gunilla Kreiss, head of research and programme coordinator Numerical Analysis (chair);
- Professor David Black-Schaffer, programme coordinator Computer Architecture and Communication;
- Professor Pierre Flener, programme coordinator Computing Science;
- Professor Sverker Holmgren (spring semester 2020), Professor Elisabeth Larsson (from autumn semester 2020), programme coordinator Applied Scientific Computing;
- Professor Bengt Jonsson, programme coordinator Computer Systems;
- Professor Alexander Medvedev, programme coordinator Systems and Control;
- Professor Carolina Wählby, programme coordinator Image Analysis and Human-Computer Interaction;
- Professor Mats Daniels, programme coordinator Computing Education Research (new programme from autumn semester 2020); and
- Professor Thomas Schön, programme coordinator Artificial Intelligence (new programme from autumn semester 2020).

In 2020, as a result of the 2019 overview of basic research programme funding (ÖB19) we had the pleasure of establishing two new research programmes, in Artificial Intelligence and Computing Education Research. The Artificial Intelligence programme received additional reinforcement during the year thanks to a new professorship funded by the Kjell and Märta Beijer Foundation and the department's close association with the University's investment in the AI4Research project.

One regular task of the PAP Group is to propose a budget for part of the department's joint research funds. The aim is that at least half should be allocated to divisions to facilitate strategic activities at divisional level, while the other half should go to joint strategic investments. In 2020, an extra SEK 4 million went directly to divisions due to unused funds from 2019. Joint investments can be divided into long-term specific support and special initiatives granted support after an application process.

In preparing ÖB19, the PAP Group consider it strategically important to strengthen and raise the profile of our activities in the field of cybersecurity. It was therefore decided to allocate joint strategic funds to start a cybersecurity arena and cofinance a senior lectureship in cybersecurity to the tune of SEK 500,000 per year for five years. As of the end of 2020, this recruitment process was still ongoing, meaning that only a fraction of the funds were consumed during 2020. The remaining funds will be transferred to the division where the new senior lecturer is employed.

Due to delays in recruitment, the previous decision to allocate SEK 500,000 per year for five years to MedTech Science and Innovation beginning in 2018 was replaced with two lump-sum payments, the last of which, SEK 667,000, was paid to Vi2 in 2020.

During 2020, the Division of Systems and Control (SysCon) received the final payment (SEK 200,000 for the past six months) of an earlier strategic investment in an assistant senior lectureship (BUL) in Machine learning (SEK 400,000 a year for four years).

The department's arena activities have been relatively dormant during 2020 due to the pandemic. The financing and coordination of the BiomedIT arena (total SEK 128,000 during 2020) ended and instead a new Smart City arena was started. Of these arena funds, during 2020 SEK 100,000 was used for the project CrushCovid. An additional SEK 250,000 was set aside for CrushCovid for use during 2021. During 2020, the department hosted the research arenas Applied Optimisation, Automated Reasoning, BiomedIT, Machine Learning, Security and Smart City.

In 2020, it was also decided to make a strategic investment of SEK 270,000 per year for six years (2021–2026) in an assistant senior lectureship in Social Robotics, specialising in reliable human-robot interaction.

Allocation of joint funds 2020

Cybersecurity	SEK 500,000
MedTech Science and Innovation	SEK 667,000
BUL in Machine Learning	SEK 200,000
BiomedIT arena	SEK 128,000
Smart City/CrushCovid	SEK 100,000
Total	SEK 1,595,000

Direct allocation to divisions

The allocation of funds directly to divisions is in relation to the faculty (Disciplinary Domain of Science and Technology) funding to the division's research programmes. With the establishment of new research programmes in Artificial Intelligence and Computing Education Research, the division of funds has therefore changed. Pending a long-term solution, the research programme in Artificial Intelligence is part of SysCon, while Computing Education Research is part of the Division of Computer Systems (DoCS).

Computing Science (CSD)	18.1%	SEK 1,006,000
Computer Systems (DoCS)	29.3%	SEK 1,628,000
Visual Information and Interaction (Vi2)	16.4%	SEK 912,000
Systems and Control (SysCon)	14.0%	SEK 778,000
Scientific Computing (TDB)	22.2%	SEK 1,234,000

Grants and appropriations for research and third-cycle education

Terminology and clarification

Principal funding to conduct research comes from Government appropriations and grants from external financiers. The term *grant research* is used to describe research funded by external financiers. The funding the University receives from the government is called *direct government appropriation for research and third-cycle higher education* (also known as faculty funding). Research financed by the government appropriation is referred to as *appropriation-funded research.*

Financial Statement 2020

Uppsala University's share of the higher education sector's total revenue from appropriations and grants is 9.8%, a figure exceeded only by Lund University.

Table 1. Financial Statement 2020 for research funded by appropriations and grants

Operational area	Opening balance 01.01.2020 SEK thousand	Revenues TSEK	Costs SEK thousand	Result (Revenue -costs) SEK thousand	Closing balance 31.12.2020 SEK thousand	Surplus margin ratio	Unused grants SEK thousand
Government appropriation for third-cycle research and education	19,707	102,122	-86,642	15,480	35,186	41%	4,557
Externally funded research	2,635	100,474	-100,421	53	2,687	3%	90,962

Financial terminology

Opening balance	The sum of all previous years' results
Closing balance	Opening balance + result
Surplus margin ratio	Closing balance divided by costs
Unused grants	Funds paid to the department by external financiers that we have not yet used

The department's result in the operational area of government appropriation for third-cycle research and education is a large profit of SEK 15.4 million. The surplus margin ratio is high at 41%.

This surplus is due to a number of factors. While the department has grown over recent years, we have not had time to recruit staff at the same pace as our appropriation has flowed in.

It normally takes a considerable amount of time to recruit staff to the core business. During 2020, the pandemic has exacerbated this situation. It has been impossible to travel, which has not only delayed recruitment processes but also complicated the practicalities of moving from other towns, cities or countries.

For obvious reasons, research collaborations, conferences and other physical meetings have been postponed or cancelled. This has resulted in costs being lower than planned.

During 2020, the coronavirus pandemic has also required us to reassign staff from research duties to first and second-cycle teaching, thus changing their cost centres. Distance teaching demanded considerable extra effort and our staff did not have time to conduct research to the extent planned at the beginning of 2020, meaning that staff costs posted against the government appropriation were lower at the beginning of the year.

A small percentage of the surplus relates to the appropriation paid to us at the end of 2020 and intended for use during 2021. An action plan will be prepared to reduce the surplus with appropriation-funded research.

When the surplus is reported to the Disciplinary Domain Board, it is as an amalgamation of appropriation-funded, grant-funded and commissioned research and support operations for research. This sum amounts to a surplus margin ratio of 15.7%, which is almost within the permitted range of 0–15% of costs. Discussion is ongoing with the faculty regarding the repayment of half of the sum exceeding 15% of costs.

The department currently has approximately SEK 91 million in unused research grants from external financiers. In total, the department has SEK 95.5 million in unused grants, corresponding to 33% of the department's total costs.

Support operations in the operational area of research have a deficit of SEK 9.5 million. As a first step towards addressing this deficit, the Department Board has decided on a percentage figure for overheads for 2021 somewhat higher than that automatically calculated in the University's budget system.

The higher education sector's income from research[1]

Uppsala University's share of the higher education sector's total revenue from appropriations is 12.2% during the five-year period 2015–2019. Our share of revenue from grants is 11.3%. If one combines the revenue from appropriations and grants, Uppsala University's share is 11.7%. Only Lund University and Karolinska Institutet receive a larger share. Looking back over the last five-year period, Uppsala University's percentage has remained stable at around 11.7%.

Grant applications and funding

Department of Information Technology

During 2020, the Department of Information Technology submitted 71 (2019: 64) applications for external grants. Of these, 22 (31%) applications were submitted to the Swedish Research Council (VR). The total funding applied for by the department was SEK 224 million (2019: SEK 278 million). Of the 71 applications, 18 were granted, corresponding to a grant rate of 23% (2019: 22%). Eight of the applications submitted by the Department of Information Technology were to calls that, as of February 2021, have not yet been decided.

[1] Data retrieved from the Swedish Higher Education Authority (UKÄ) database, which is available on the website. Results for 2020 will be published on 15.04.2021.

As of 2019, the department's applications for external grants are documented and compiled using the form *Preparation for head of department´s signature*, which all researchers complete and submit to the head of department for approval before submitting the application to the prospective financier. It is difficult to present statistics for previous years.

The table below provides a summary of the Department of Information Technology's applications for external grants submitted sometime during 2020.

Table 2. Summary of grant applications submitted by the Department of Information Technology 2020[1]

NOTE: Eight of the applications reported in the table were still awaiting notification of whether funding had been granted when the table was compiled in February 2021. See Note 3 below.	**Amount (SEK)**			**Applications**		
	Amount applied for SEK thousand	**Granted amount SEK thousand**	**Grant rate, amount**	**Total applications**	**Granted applications**	**Grant rate, applications**
VR	**102,843**	**7,755**	**8%**	**18**	**2**	**11%**
VR, Dept. of IT is a co-applicant	**6,168**	**0**		**4**	**0**	
Total Other funders	**115,429**	**44,119**	**38%**	**49**	**16**	**33%**
of which EU	41,304	0		8	0	
of which Formas	2,470	3,440		2	2	
of which SSF	22,300	25,416		3	3	
of which Vinnova	15,779	10,604		12	6	
Total 2020	**224,440**	**51,874**	**23%**	**71**	**18**	**25%**
Decision during 2021[2]		32,905	(27%)		8	(29%)
Total 2019	278,214	29,734	11%	64	14	22%

1 In cases where the funding applied for is in a currency other than SEK, the sum has been recalculated using the Riksbank exchange rate (annual average for 2019), see https://www.riksbank.se/sv/statistik/sok-rantor--valutakurser/valutakurser-till-deklarationen/.

2 The figure in brackets shows the grant rate if only applications already decided by the funder are included in the calculation. The following applications are awaiting notification of whether funding has been granted. Notification is expected during spring or autumn 2020.

3 Applications awaiting notification of whether funding has been granted

Financier	Amount applied for	Total applications
Swedish Energy Agency	2,646	1
UU Innovation	294	1
Vinnova	2,185	2
EU	27,765	3
WASP	14	1
Total	32,905	8

Comparison with other TekNat departments

Share of appropriation revenue

The Department of Information Technology's share of TekNat's appropriation revenue during the five-year period 2016–2020 is 11% (see Table 3 below). There has been no significant change compared to the previous five-year period, 2015–2019.

Table 3. Share the total TekNat appropriation revenue for research[1] 2016–2020

Share of appropriation revenue			
Department	**Appropriation TSEK**	**Share of total TekNat appropriation revenue 2016–2020**	Share of total TekNat appropriation revenue 2015–2019
100 Disciplinary Domain Board for TekNat	89,350	2%	2%
104 Dept. of Mathematics	202,013	5%	5%
106 Dept. of Information Technology	**438,726**	**11%**	11%
113 Dept. of Physics and Astronomy	589,117	15%	15%
120 Dept. of Materials Science and Engineering	61,898	2%	
122 Dept. of Electrical Engineering	47,660	1%	
124 Dept. of Civil and Industrial Engineering	14,148	0%	
125 Section of Technology	466,007	12%	15%
127 Ångström Laboratory	323	0%	0%
130 Dept. of Chemistry – BMC	217,857	6%	6%
139 Dept.of Chemistry – Ångström	365,042	9%	9%
140 Dept. of Biology – Biology Education Centre	5,500	0%	0%
146 Dept. of Ecology and Genetics	326,803	8%	9%
148 Dept. of Organismal Biology	251,209	6%	**6%**
152 Dept. of Cell and Molecular Biology	393,350	10%	**10%**
161 Dept. of Earth Sciences	400,848	10%	**10%**
172 International Science Programme	15,682	0%	**0%**
175 Tandem Laboratory	12	0%	**0%**
Total 2016–2020	**3,885,546**	**100%**	100%
Total 2015–2019	3,779,946		

1) Data retrieved from Glis 26.01.2021 (Tab: Finance). In addition to funding from the Disciplinary Domain Board for TekNat, the above table also includes funds for strategic research areas, the vice-chancellor's strategic investments and the redistribution of funds from other disciplinary domains.

Share of grant income

The Department of Information Technology's share of TekNat's grant revenue during the five-year period 2016–2020 was 13% (13%). The percentage in brackets shows the result for the five-year period 2015–2019. When grant revenue is divided by funder, the Department of Information Technology's share was: Swedish Research Council, 19% (21%); Vinnova, 23% (26%); and Swedish Foundation for Strategic Research, 21% (19%), see Table 4.

The percentage of TekNat's total grant revenue that came from the Swedish Research Council was 34% (36%). The corresponding percentage from the Knut and Alice Wallenberg Foundation (KAW) was 11% (11%). The percentage of the Department of Information Technology's grant revenue funded by the Swedish Research Council was 52%. Table 4 shows the department's share of TekNat's total grant income over the five-year. Income is from all projects undertaken during the period. Seven funders have been selected for detailed

accounting. data retrieved from Glis (Uppsala University's general management and information system).

Table 4. The department's share of TekNat's total grant income[1] divided by funder, 2016–2020.

Department	VR[2]	Vinnova	SSF	KAW	Formas	Swedish Energy Agency	EU[3]	**Total** Including the seven separately reported	Total 2015–2020
100 Disciplinary Domain Board for TekNat	0%	0%	0%	-7%	0%	0%	0%	0%	0%
104 Dept,of Mathematics	3%	0%	0%	14%	0%	0%	1%	3%	3%
106 Dept. of Information Technology 2015–2019 result in brackets	**19%** (21%)	**23%** (26%)	**21%** (19%)	**8%** (7%)	**6%** (5%)	**0%** (0%)	**9%** (11%)	**13%** (13%)	13%
113 Dept. of Physics and Astronomy	24%	1%	12%	21%	1%	5%	14%	16%	15%
120 Dept. of Materials Science and Engineering	2%	5%	5%	2%	2%	3%	2%	2%	
122 Dept. of Electrical Engineering	1%	4%	1%	0%	0%	3%	1%	1%	
124 Dept. of Civil and Industrial Engineering	0%	1%	0%	0%	0%	2%	0%	0%	
125 Section of Technology	8%	38%	20%	12%	9%	32%	15%	12%	16%
130 Dept. of Chemistry – BMC	4%	2%	8%	2%	2%	0%	2%	4%	3%
139 Dept.of Chemistry – Ångström	7%	11%	22%	6%	13%	41%	20%	12%	12%
146 Dept. of Ecology and Genetics	9%	0%	1%	9%	31%	0%	8%	7%	8%
148 Dept. of Organismal Biology	5%	0%	0%	9%	10%	0%	6%	5%	4%
152 Dept. of Cell and Molecular Biology	13%	2%	6%	22%	7%	0%	14%	11%	11%
161 Dept. of Earth Sciences	5%	13%	0%	1%	20%	14%	9%	6%	6%
172 International Science Programme	0%	0%	0%	0%	0%	0%	0%	8%	8%
175 Tandem Laboratory	1%	0%	4%	0%	0%	0%	0%	1%	1%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	100%
Total grant income 2015-2019, SEK thousand	**1,773,943**	**98,284**	**337,959**	**573,992**	**181,004**	**364,346**	**632,085**	**5,147,203**	
Total grant income 2015-2019, SEK thousand	1,789,882	109,387	272,358	544,426	168,805	357,352	569,662	4,928,007	

1) Data retrieved from Glis 26.01.2021 (Tab: Finance). Please note that accrual accounts are excluded from the table.
2) Calculation of the Department of Information Technology's share of grant income from VR: (Department of Information Technology's grant income from VR)/(All TekNat grant income from VR) = 19%.
3) The EU column shows the outcome for the following financiers in the financial system:

European Research Council (ERC) FP7	European Commission, Horizon 2020 (H2020)
European Research Council H2020	Marie Skłodowska-Curie actions (H2020)
European Commission Seventh Framework Programme (FP7)	European Institute of Innovation and Technology (EIT) (H2020)
European Commission Marie Curie Actions (FP7 People)	European Commission, other EU funding
610290 EU Commission, up to FP6	

Comparisons with other Swedish higher education institutions

Project funding granted by Knut and Alice Wallenberg Foundation during the period 2016-2020

The Knut and Alice Wallenberg Foundation granted funding totalling SEK 2,132 million (SEK 2,270 million) to projects in the fields of science including technology/physics/ mathematics. The result in brackets is for the previous five-year period, 2015–2019. Uppsala University's share of granted funds over the five-year period was 15% (18%), corresponding to SEK 325 million (SEK 398 million), from 11 (13) grant applications. During the five-year period, the Department of Information Technology has had a grant of SEK 25 million approved.

Grants from the Swedish Research Council during the period 2015–2019[2]

During the five-year period 2015–2019, Uppsala University's share of Swedish Research Council funding granted in the subject area Natural and Engineering Sciences was 17%. No other higher education institution received a larger share in the subject area Natural and Engineering Sciences. The grant rate is 19%, compared with a total grant rate of 20%.

Computer and Information Science is a subdivision of Natural and Engineering Sciences. Uppsala University's share of the subdivision's funding over the five-year period was 16%, a figure exceeded only by Chalmers University of Technology and KTH Royal Institute of Technology. Uppsala University's grant rate is 19%, compared with a total grant rate of 16%.

Full-time equivalents 2020

Table 5 shows the *total full-time equivalents* (FTEs) at the Department of Information Technology in 2020, and cost centres for salary payments in each staff category. It is possible to obtain a picture of which positions at the department work in appropriation-funded research and grant research by studying *salary payments* for 2020. The table shows the percentages of the total salaries of each position allocated to various cost centres. Based on these figures, it is apparent that during 2020 senior lecturers spent an average of 38% of their time on research (26% appropriation + 12% grant), while the equivalent figure for professors was 56% (32% appropriation + 24% grant). If one divides professors into external professorial appointments and those promoted from senior lecturer, the average is 69% (42 + 27%) and 51% (28 + 23%) respectively.

During 2020, the number of FTEs was lower than in 2019 (-10), mainly in the category of technicians. This is due to the fact that Uppsala University's IT operations are now centralised. Staff previously employed by the Department of Information Technology now work for University IT Services.

In 2020, 33% of salaries were coded in the cost centre for the operational area GA (government appropriation for first and second-cycle education and support operations). The equivalent percentage in 2019 was 26%. The disparity between these years is the result of recoding in conjunction with distance teaching introduced due to the COVID-19

[2]The data under this heading has been retrieved from the Swedish Research Council's website. Data for 2020 will be published some time in late March.

pandemic. During 2020, a larger percentage of staff working hours was allocated to the operational area GA, meaning that the cost centre for those hours was changed to reflect this. Recoding also affected support staff, directors and doctoral students with teaching duties. Teaching staff were also paid more overtime from the government appropriation for first and second-cycle education.

Table 5. Cost centres for salaries 2019 by position[1]

Category of employment	Position	Total FTEs	GU	Research			Assignments	Total
				Research support	Appropriation	Grant		
Administrative staff		**21.0**	**36%**	**37%**	**21%**	**5%**	**0%**	**100%**
2019		19.1	27%	47%	23%	3%	0%	100%
Technician		**17.1**	**2%**	**3%**	**50%**	**45%**	**0%**	**100%**
2019		25.2	5%	19%	38%	38%	0%	100%
Other teaching and research staff	Teaching assistant	5.0	100%	0%	0%	0%	0%	100%
	Researcher	9.2	13%	1%	12%	71%	4%	100%
	Research assistant	1.7	0%	0%	0%	100%	0%	100%
	Senior researcher	0.1	0%	0%	0%	100%	0%	100%
	Total	**16.0**	**31%**	**0%**	**8%**	**58%**	**3%**	**100%**
2019		13.2	23%	4%	20%	44%	9%	100%
Postgraduate students	Assistant with doctoral grant	6.6	25%	0%	34%	41%	0%	100%
	Doctoral student	76.1	21%	0%	27%	50%	1%	100%
	Marie Curie doctoral student	2.0	0%	0%	1%	99%	0%	100%
	Total	**84.7**	**21%**	**0%**	**27%**	**51%**	**1%**	**100%**
2019		89.7	16%	0%	33%	50%	1%	100%
Career-development position	Associate senior lecturer	13.5	41%	0%	34%	25%	0%	100%
	Post-doctoral researcher	6.2	15%	0%	31%	53%	1%	100%
	Total	**19.7**	**25%**	**0%**	**32%**	**43%**	**0%**	**100%**
2019		20.3	11%	0%	27%	62%	0%	100%
Professor	Professor. promoted	21.2	43%	7%	28%	23%	0%	100%
	Professor UU	9.6	23%	8%	42%	27%	0%	100%
	Visiting professor	0.7	48%	0%	51%	1%	0%	100%
	Post-retirement professor	0.2	26%	0%	0%	74%	0%	100%
	Total	**31.7**	**37%**	**7%**	**32%**	**24%**	**0%**	**100%**
2019		29.6	32%	6%	38%	24%	0%	100%
Lecturers	Adjunct lecturer		100%	0%	0%	0%	0%	100%
	Lecturer	6.9	97%	0%	0%	3%	0%	100%
	Total	**6.9**	**97%**	**0%**	**0%**	**3%**	**0%**	**100%**
2019		6.8	91%	1%	5%	3%	0%	100%
Senior Lecturer	Senior Lecturer	20.9	56%	6%	25%	13%	0%	100%
	Adjunct senior lecturer	0.1	50%	0%	0%	50%	0%	100%
	Senior lecturer, promoted Lecturer	2.5	64%	0%	34%	2%	0%	100%
	Total	**23.4**	**57%**	**4%**	**26%**	**12%**	**0%**	**100%**
2019		26.4	47%	8%	30%	15%	0%	100%
Total		**220.5**	**33%**	**6%**	**28%**	**33%**	**0%**	**100%**
2019		230.3	26%	8%	31%	34%	1%	100%

Data on total FTEs retrieved from Glis 02.02.2021 (Tab: Staff, model: Staff structure per annum). Payroll data retrieved from the Primula client, report *Payroll Specification*. Transfers of salaries in the Raindance finance system is not included in the above table.

Third-cycle Programmes and courses

FUS, FUA, and FUAP group

The Director of PhD Studies ("forskarutbildningsstudierektor", FUS) was Pierre Flener, budgeted at 10% in 2020.

The Administrator for PhD Studies ("forskarutbildningsadministratör", FUA) was Elisabeth Lindqvist, budgeted at 38% (of 80% of full time) in 2020.

The Professors Responsible for PhD Education Subjects ("forskarutbildningsansvariga professorer", FUAP) were the following: jointly Parosh Abdulla and Pierre Flener (Computer Science, CS); Mats Daniels (CS: with a specialisation in CS Education Research); Thiemo Voigt (CS: Computer Communication); Sverker Holmgren (CS: Database Technology) until 23 June and then Pierre Flener; Anders Arweström Jansson (CS: Human-Computer Interaction); Wang Yi (CS: Embedded Systems); Ken Mattsson (Scientific Computing, Numerical Analysis); Maya Neytcheva (SC: SC); Alexander Medvedev (Electrical Engineering, EE: Automatic Control); Thomas Schön (EE: Signal Processing) until 9 June and then David J. T. Sumpter; and Ingela Nyström (Computerised Image Processing).

The FUS, FUA, and FUAP roles are described in dnr IT 2013/49 and are fully followed, such as launching the processes of revising individual study plans; being contact persons; standardising departmental routines; helping PhD students and supervisors; maintaining webpages; etc.

The main webpage is the PhD Manual of the IT department: see https://mp.uu.se/c/perm/link?p=20962820 .

FUS-FUAP-FUA-ITDR Meetings

According to the local Action Plan for PhD Education ("Åtgärdsplan för forskarutbildningen", see https://www.it.uu.se/internt/policies_rapporter_handlingsplaner/Action_plan_PhD_Education_eng.pdf or https://www.it.uu.se/internt/policies_rapporter_handlingsplaner/atgardsplan_forskarutbildningen.pdf), the FUS convenes the FUAPs once per term for discussing topics of interest. The FUA also attends, and the PhD Student Council of the IT Department ("IT institutionens doktorandråd", ITDR) delegates a representative.

A lot of new standardising of departmental routines was achieved in 2020: the minutes are at https://mp.uu.se/c/perm/link?p=303130870 and are informed about in the LäsIT blog of the IT department.

For example:

- Checklist for Halftime Seminar: written by FUA and FUS, and published (after FUAP and ITDR feedback) in the PhD Manual of the IT department on 10 February 2020: see https://mp.uu.se/c/perm/link?p=452961279 .
- A follow-up report to the audit by Universitetskanslersämbetet (UKÄ) in 2017 of the PhD subject Computer Science (CS) and three of its five specialisations (namely CS: Communication, CS: Database Technology, and CS:Embedded Systems) was originally sent to the Postgraduate Educational Board ("forskarutbildningsnämnden", FUN) of TekNat on 3 December 2019 at their request: it was written by Michael Thuné, with feedback by the FUS, and then approved by the Management Group ("ledningsgrupp", LG) of the IT department. FUN requested some additions in 2020, which were written by the FUS. The final report was approved by LG on 5 May 2020, by FUN on 13 May 2020, and by the Faculty Board ("fakultetsnämnden", FN) of TekNat on 9 June 2020: see https://mp.uu.se/documents/432512/20963686/Rapport+uppfoljning+UKA+utarderin g+200505.pdf . It assigns the following four responsibilities to the FUS-FUAP group:

    1. Continuous feedback to PhD students about the quality of their progress.
    2. Continuous development of the basket of PhD-level courses.
    3. Enforcement of completion of the Ethics course before a halftime seminar: by 31 December 2021.
    4. Harmonisation of the Hagersten matrix with the national PhD goals A1 to C2: by 31 December 2020.

Goal 3 is already almost achieved: seven of our eleven subject curricula ("ämnesstudieplan", ÄSP) have by now been revised (in 2019 or 2020) by their FUAPs in order to make a PhD course on research ethics also compulsory before the halftime seminar, which itself is made compulsory in case no licentiate seminar is held, with a strong incentive to take the ethics course as early as possible. Two of the other four ÄSP will be revised during spring 2021, but not so the third, as the licentiate degree is de-facto mandatory in its subject, nor the fourth, as its subject will be shut down after the last current student graduates (and they are all beyond 50%).

Goal 4 was achieved on 28 December 2020, and the new matrix (lead-designed by David Sumpter) is called the PhD Progression Matrix, whose use during senior-group meetings and ISP revision processes is now even stronger recommended: see https://mp.uu.se/c/perm/link?p=574766015 .

Alignment with operational plan for 2020

1. Our biggest project for 2020 was to improve the awareness of PhD students and (especially junior) supervisors of the PhD processes and the rights & duties of PhD students, although all the information is easily findable within the PhD Manual of the

IT department. Upon writing that item in early November 2019, planning this became the main agenda item of the mid-December 2019 meeting of the FUS and FUAPs. We found (see the minutes in the PhD Manual) that it is not clear whether the problem is a lack of information, or the difficulty of finding information, or information overdose in the first few PhD weeks, or the lack of initiative for searching information, or the lack of a clear routine for who is responsible for providing which information, or a combination of these.

It was decided that the FUS checks in 2020 with the HoD about the ongoing process of improving the human-resource routines for new employees, so as to integrate the new measures: this began in early 2020 (see Meetings below) but was then indefinitely postponed due to more urgent issues caused by the outbreak of the pandemic.

2. In 2020 and 2021, the remaining two specialisations of the PhD subject Computer Science (CS) --- namely Computing Education Research (datavetenskapens didaktik) and Human-Computer Interaction (människa-datorinteraktion) --- and our five other PhD subjects and their specialisations are audited ("utvärderingen av forskarutbildningen") by TekNat (unlike the other CS ones, which were audited in 2017 by Universitetskanslersämbetet, UKÄ).

   This began with a kickoff (5 June), then a nomination of suggested evaluators (8 September), followed by the scheduling (20 October) of a site visit on 28-29 April 2021, and since 1 November the ongoing collaborative writing of an extensive self-evaluation and the compilation of comprehensive statistics: this consumed a lot of time in collegial consultation of the FUS, the FUA, the 7 concerned FUAPs, and the Head of Department, and will continue to do so until 15 October 2021.

3. We planned to contribute to the organisation of the "PhD-Student Day" in 2020 that was decided upon after the wellness survey in 2019.

   Upon unenthusiastic feedback obtained by ITDR through a poll among the PhD students, this plan was postponed, if not abandoned.

Meetings attended or held by the FUS, FUA, and/or FUAPs

- 21 January 2020: FUAP meeting at TekNat.
- 6 February 2020: Appointment of FUS to three (of four) task forces on PhD education at the IT department (namely: Recruitment; Introduction; PhD Day; but not: Stress); appointment of two ITDR representatives (Robin Eriksson and Sonja Mathias) in one task force (PhD day). After some initial meetings, the pandemic broke out and all task forces were put to sleep until further notice.
- 16 March and 13 October 2020: FUS seminars on the IT department at the PhD course "Research Introduction for New PhD Students" of TekNat.

- 27 April 2020: FUS at UU kickoff for "Universitetskanslersämbetets (UKÄ) lärosätesgranskning 2020", a meta-audit on how UU faces audits.
- June 2020: FUS and involved FUAPs at the TekNat kickoff for the TekNat audit of seven of our eleven PhD subjects.
- 10 June 2020: FUS-FUAP-FUA-ITDR spring meeting at IT department.
- 9 November 2020: FUS meeting at TekNat.
- 14 December 2020: FUS-FUAP-FUA-ITDR autumn meeting at IT department.

Statistics 2020 (from GLIS)

- Active (minimum 10% activity): 118 PhD students, namely 33 women (28%) and 85 men (72%)
- PhD: 13 defences
- PhL: 6 seminars (including a failed one)
- Recruited: 15 new PhD students, namely 4 women (27%) and 11 men (73%)

Collaboration

Collaboration between the department and society at large is conducted with enormous commitment through a range of activities largely determined on the initiative of our staff through bottom-up management. In 2019, the Department Board decided to appoint a collaboration coordinator to map and coordinate the department's collaborative activities. Ida-Maria Sintorn took up this post (10% of an FTE) at the turn of 2020.

In addition to compiling and coordinating activities, over the course of the year the role has involved working with the head of department and head of research to prepare a collaboration procedure. This procedure is intended to assist staff when initiating collaborations and collaborative projects with external partners so that, as far as possible, we ensure that ethical, political and financial aspects and contingencies are given due consideration. The preparation of the procedure was prompted by cooperation between the Department of Information Technology and Huawei and concerns regarding Huawei's role vis-à-vis the Chinese state. The procedure is a requirement for any agreement that requires the signature of the head of department (excluding with VR and Formas) that involve non-academic or international external parties. In brief, the procedure requires researchers to consider and discuss potential political, ethical and financial ramifications with the collaboration coordinator, the PAP Group and head of division before drafting an agreement with the assistance of the Legal Affairs Division and then obtaining the signature of the head of department.

The role of collaboration coordinator has also involved preparing proposals for goals, target figures and associated activities for the department's and faculty's goals and strategies for collaboration. As a result of the Government's new Research and Innovation Bill, the role will also be more prominent in relation to the University's assignment.

The role has also involved representing the Department of Information Technology in discussions, primarily with the Division for Contract Education, regarding the expanded role of higher education institutions in lifelong learning. These discussions have addressed the need for long-term planning and structures to inventory what we can offer and to whom, how courses/programmes might be designed and what we need to achieve this in the short and long terms.

Examples of the department's collaborative activities during 2020 are reported below, divided into three areas: schools and the public, the business community and society, and education and lifelong learning.

Schools and the public

Both SciFest and the second half of the celebration of the Department of Information Technology's 20th anniversary were completed before pandemic restrictions prevented further physical arrangements. Some activities have continued online, for example, CryptoParty and Team Steam Stream meetings (see below). It is especially pleasing to note that the 'interact with social robots' activity at SciFest collected data for an article that was published later in the year. Many of our staff also disseminate information about their research via social media such as Facebook, YouTube, Twitter and blogs and via websites.

- The Department of Information Technology celebrates its 20th anniversary! In 2019, it was 20 years since the Department of Information Technology was established at Uppsala University. To celebrate the anniversary, we held a series of public seminars on IT to inform about our research, education and collaborations, beginning in autumn 2019 with the first three seminars in the series: *Effective Computations: A Driving Force for IT Development*, *Count on Your Brain: How Can IT Improve Health* and *Internet-of-Things for a Smarter Society*. The series continued during spring 2020 with the seminars *AI Within the Sciences* and *Cybersecurity*. The final seminar in the series, *The Programming Society*, was postponed due to COVID-19.
- The Department of Information Technology was represented at several activities at SciFest 2020, including robots playing cat-and-mouse games and Bebras cards to develop algorithmic and computational cognition, interact with social robots, AI bingo, feeling images with the aid of haptics, etc.
- CryptoParty: a learning space for introducing people to the basic tools for self-protection in the digital space. Arve Gengelbach arranged three meetings in Uppsala during 2020, one physical meeting in Carolina Rediviva followed by two online events: http://user.it.uu.se/~arvge836/cryptoparty/
- Team Steam Stream: together with students from IT, Lars Haulin from Nixu Corporation runs this open forum that meets regularly (during 2020, online on Monday evenings) to discuss and solve IT security problems. They also participate in global Capture the Flag (CTF) IT security competitions: https://teamsteamstream.github.io/.
- Ginevra Castellano discussed her research into social robotics at Associazione Caravaggio in Uppsala.

The business community and society

Collaboration with the business community and society is largely conducted through research projects involving partners from the private and public sectors. You can find the logotypes of a selection of public-sector stakeholders with whom the department enjoys research collaborations on the left of the image below, against the green background. During 2020, a number of new industry-funded research projects were initiated to begin in 2021, including with Huawei, Ericsson, Arm (Ltd.), Microsoft and RaySearch Laboratories.

Photographs from the Department of Information Technology's activities at SciFest 2020.

The department's staff sit on working groups, reference groups and boards at many institutions, including the Royal Swedish Academy of Engineering Sciences (IVA), IoT Sverige, RIOT and aSSIsT. During 2020, Thomas Schön – Uppsala University's newly installed Beijer Professor of Artificial Intelligence – was involved in preparing the AI Agenda for Sweden, which will be launched in spring 2021. The department hosts externally employed doctoral students together with RISE Research Institutes of Sweden, Elekta, Veoneer and IVL and members of department staff are also on leave of absence to work in industry at companies such as Vironova AB, Q-linea, TopTracer and Astrego AB. The department also employs as an adjunct teacher from Ericsson Research.

Over the course of the year, the department's staff gave a number of presentations to the business community both at the companies and at the department, as well as hosting visitors

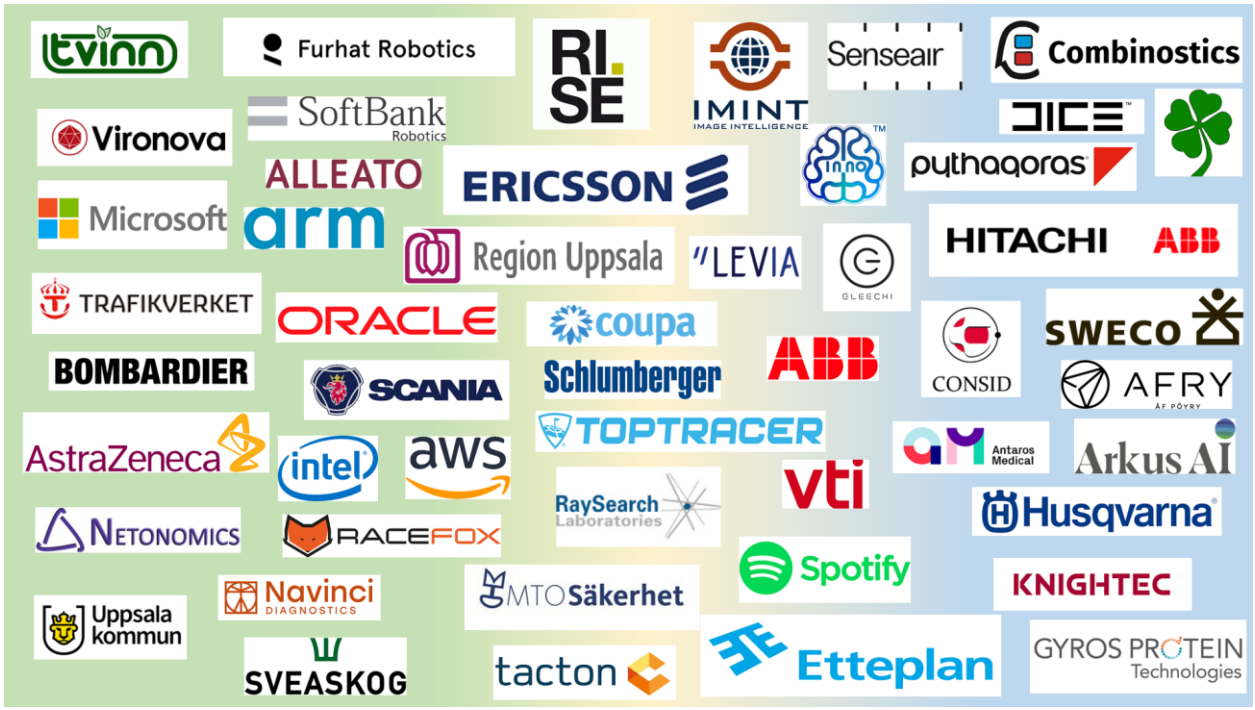
from the private sector. Our researchers presented their research on subjects such as: machine learning, to SambaNova Systems and Cerebras Systems; drones and 5G, to Ericsson; virtual memory and memory encryption, to Arm; intermittent computing, to NXP; and machine learning and AI, to Tobii and Veoneer. Etteplan visited us to discuss opportunities to collaborate on image analysis, while IT was also represented at research collaboration meetings with TekNat's strategic partner Hitachi ABB Power Grids.

Education and lifelong learning

Collaboration on education is undertaken in the form of courses aimed at private and public-sector stakeholders and through private-sector participation in our own courses and programmes. In late 2020, the department held a course in response to the difficulties of reaching professionals working from home due to the COVID-19 pandemic: Cybersecurity: an academic perspective into recent application domain. A recurring three-day course in systems and control was also offered during 2020 to wastewater treatment plant staff, consultants and suppliers on behalf of Swedish Water. The department successfully tendered to hold the course Introduction to Programming in Text-based Environments on behalf of the Swedish National Agency for Education during autumn semester 2021.

Many of the courses offered by the department have strong links to and participation by private and public-sector stakeholders, either through the project components of courses or visiting lecturers and company presentations. For example, the course *Computer-Assisted Image Analysis* included company presentations by ImInt, Etteplan, ProTracer and RaySearch Laboratories, while the course *IT and Society* is built entirely around collaboration with Region Uppsala. The course *Complex IT Systems* also uses visiting lectures and student exercises with Region Uppsala, as well as GE Healthcare, Enfo Group, Tidler AB and TietoEvry. In the Computer Science programme, the project course is based around a large project with a single company, which in 2020 was Ericsson. You can find the logotypes of some of the companies that have contributed projects and/or visiting lecturers to the department's courses in the middle of the image below, against the yellow background.

A large percentage of the department's students conduct their degree projects at or on behalf of the business community or public-sector organisations. Examples of the companies where students have conducted degree projects during 2020 are shown in on the right of the image below, against a blue background.



Logotypes of companies with which the department collaborates on research projects (green background), course projects and/or guest lecturers (yellow background) or degree projects (blue background).

Systematic work environment management

During 2020, the department's Work Environment Group consisted of:

- Lina von Sydow, head of department;
- Elizabeth Neu Morén, administrative manager;
- Ulrika Andersson, human resources generalist (also fire safety representative);
- Anna-Lena Forsberg, human resources generalist;
- Marina Nordholm, health and safety representative (until 31.12.2021);
- Liselott Dominicus van den Bussche, health and safety representative (until 31.12.2022); and
- Märta Haeggström, student representative.

The Work Environment Group held meetings over Zoom on 28 September and 25 November. Group members have also corresponded by email.

During 2020, the Crisis and Crisis Support Group consisted of:

- Lina von Sydow, head of department;
- Ulrika Andersson, human resources generalist (also fire safety representative);
- Liselott Dominicus van den Bussche, health and safety representative (until 31.12.2022); and
- Märta Haeggström, student representative.

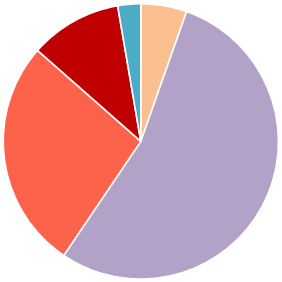
The Crisis and Crisis Support Group met once during the year, on 11 March (principally due to the outbreak of coronavirus), but was also activated during June when a member of staff died suddenly.

Activities during the year

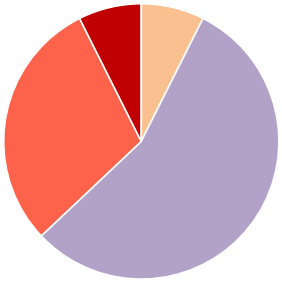
The year has been very much marked by the coronavirus pandemic, especially its impact on the work environment. For many, long-term teleworking has taken its toll on energy levels and mental wellbeing, with distance teaching in particular demanding considerable extra work. During late autumn, we conducted a simple staff survey to check on the situation. The results of the four most important questions are reported below in the form of PowerPoint slides.

To what extent do you feel worried about the ongoing pandemic?

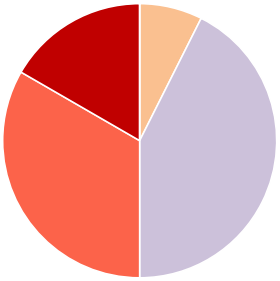
TA personell



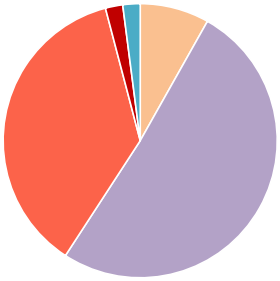
BUL + researchers + postdocs



PhD students

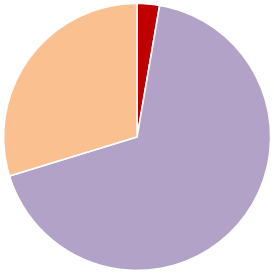


UL + professors + lecturers

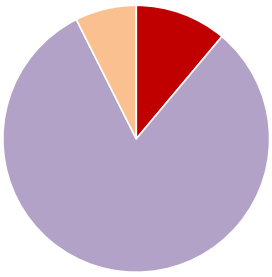


To what extent do you feel socially isolated due to the pandemic?

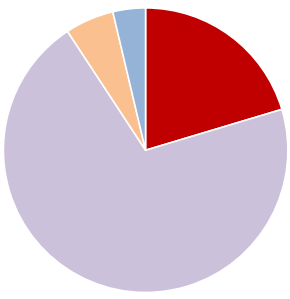
TA personell

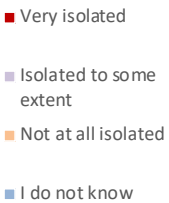


BUL + researchers + postdocs

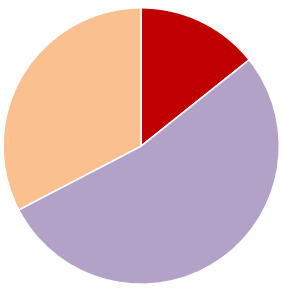


PhD students



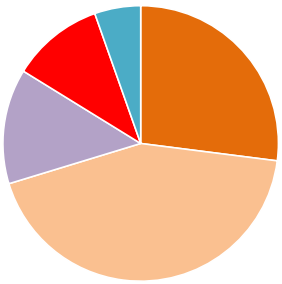


UL + professors + lecturers

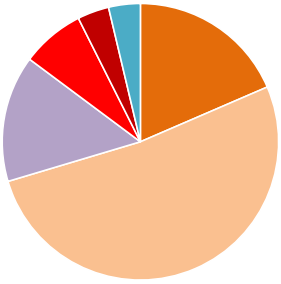


How would you describe your mental health right now?

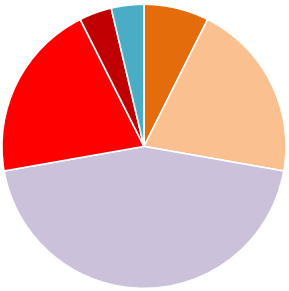
TA personell



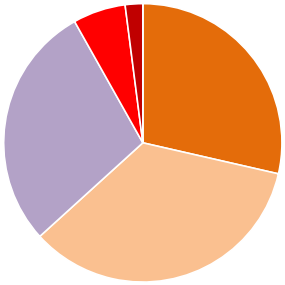
BUL + researchers + postdocs



PhD students

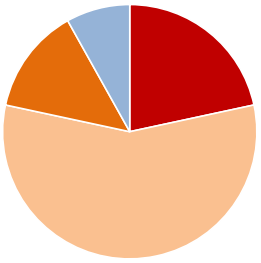


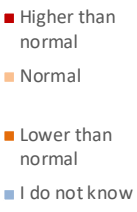
UL + professors + lecturers



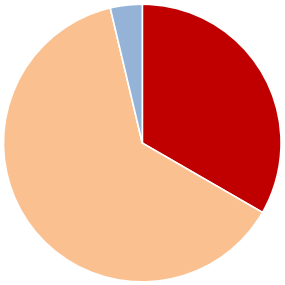
What does your workload look like right now compared to a ”normal” situation?

TA personell

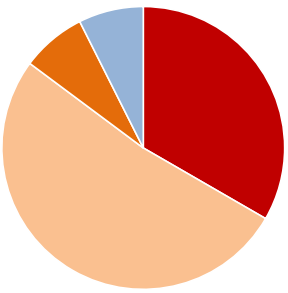




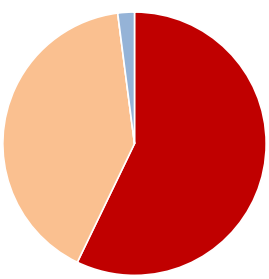
BUL + researchers + postdocs



PhD students



UL + professors + lecturers



While these results support the conclusion the extra burden of work has primarily fallen on teaching staff (the category *teachers* estimate that their workload has increased the most), it is above all doctoral students who perceive their situation to be most difficult from a psychosocial perspective.

The initiatives we implemented during 2020 as a reaction to the difficult situation caused by the pandemic were:

- paying overtime and/or changing cost centres between various operations to compensate for increased working hours for teaching;
- on request, purchasing equipment to all staff to facilitate teleworking (mobile phones, tablets, headsets, microphones, green screens, work lighting, standing desks (adaptions to standard tables, etc.). All staff were also offered the opportunity to borrow office chairs and/or extra displays, etc.;
- joint Zoom activities such as quizzes, presentations of projects granted funding, presentations of common interest (e.g. Inspera), etc.; and
- extra (brief) performance reviews (for seniors) to discuss the situation and extra senior discussions for doctoral students.

The following activities have also been implemented over the course of the year as part of our routine systematic work environment management.

- Performance reviews for seniors during late spring.
- Senior group discussions for doctoral students during late spring and revision of individual study plans during late summer/autumn. (Performance reviews for doctoral students are divided into two parts. firstly, in conjunction with agreeing a new individual study plan and, secondly, in conjunction with the senior group's follow-up meeting for doctoral student's.)
- The mentoring programme has continued as usual, except remotely.
- All new employees who do not speak Swedish have been encouraged to attend Swedish lessons.
- The pandemic has made it impossible to conduct any first-aid training.
- The normal subsidies apply to wellness activities and wellness hours, although it has been necessary to exclude massages and fruit baskets during certain periods.
- A review has been conducted of the current situation regarding leadership training for members of the department's Management Group, the head of research, director of third-cycle studies and members of the Director of Studies Group. As of 31 December 2020, 100% of the abovementioned have undergone some form of leadership training.

Equal opportunities activities

This document includes a description of last year's equal opportunities work, as well as a quantitative description of the current situation at the department.

Description of equal opportunities work

The Head of Department has carried out the activities for which they were responsible according to the plan, such as the salary revision, the monitoring of gender issues in the management team, ensuring that there are representatives of both sexes in most decision-making and preparatory bodies.

The Head of Research has actively participated in the equal opportunities group as representative of her Division, and actively worked with gender mainstreaming at the department.

The Equal Opportunities Group worked well according to the continuous work described in the Operational Plan for equal opportunities for 2020. The items in the action plan for 2020 were addressed, with a few exceptions and with several additions of things we did, as described in the sections below.

The Equal Opportunities officer has coordinated the work by the equal opportunities group described below, and initiated new activities to support gender mainstreaming at the Department, seeking and obtaining funding from Teknat and Uppsala University in collaboration with the Head of Department, Vice Head of Department and Head of Research. The funded activities involve using gender equality indicators to monitor the gender distribution of research resources and funding at the Department of Information Technology and how they can be used in a long-term perspective to improve gender mainstreaming work at the Department.

Enhance capacity of the equal opportunities group to work as change agents

We have provided input to the Head of Department on the need to organise training courses for staff on how to increase stress-free work productivity.

We organised a retreat for the equal opportunities group in September 2020 at Eklundshof, where the equal opportunities group assessed the work done throughout the year and produced a draft of the operational plan for equal opportunities for 2021.

We started discussions about organising Swedish fikas, but plans were postponed due to the pandemic.

We organised equal opportunities fikas with several guest speakers. For example, we had presentations from Nina Almgren and Karin Stensjö about the Teknat Faculty's plan on how to support inclusion of equal opportunities aspects in research proposals; Maria Carlander from the Uppsala Programmerings Center; Cecilia Persson (Department of Materials Science and Engineering) and Kristina Andersson (Centre for gender Research), who discussed gender aspects in a Vinnova-funded research Center; Emma Nilsson from UTN, who talked about UTN's work with surveys on discrimination; Ulrike Schnaas (Division for Quality Enhancement, Academic Teaching and Learning), who gave a seminar on gender aspects in

PhD supervision; Murtazo Nazarov, who presented the equal opportunities project at the Division of Scientific Computing; Carla Puglia, Program Director at the International Science Programme, who presented equal opportunities work conducted in the programme.

We started discussions to organise an equal opportunities day in collaboration with Teknat and proposed a workshop with Helena Bernald on "Personal Leadership - Time Management and Reducing Your Stress"; however, this did not happen due to the pandemic.

We discussed the need to provide examples of projects that can be funded by the equal opportunities group, and planned to update the description of calls for projects in 2021. We have rewritten the calls for projects to widen the scope of each call to all project types and invite applicants to join review of applications at equal opportunities meetings.

We have started discussions with the Head of Department on how to make sure that relevant information on what to do and whom to contact in case of discrimination is easily accessible. We have started discussions on finding out how other departments do this. We also discussed initial plans on finding out from students what they think would be the best way to make this information transparent. Some of these activities have been delayed or postponed due to the pandemic.

We have produced a graphic profile and flyers to promote the equal opportunities group.

Diversity aware education that creates a better learning environment for all

We organised the delivery of a lecture on diversity and discrimination in introductory courses of most of the BSc and MSc programs at the Department.

We have started discussions, in collaboration with UTN, on the need to train staff on how to conduct course projects with diverse student groups. We have investigated the possibility to adopt a student-centred approach and collect input from students using a survey in collaboration with Anneli Häyrén. This has been also discussed in group of directors of studies. This work has been put on hold due to the pandemic.

We have invited Emma Nilsson from UTN to an equal opportunities fika to discuss results of the UTN survey.

We have promoted awareness about harassment issues in students contexts at our Department via the diversity and discrimination lectures delivered in introductory courses of BSc and MSc programs.

We have started discussions on the possibility to organise a teaching assistants training day/lunch on bias, discrimination, harrasement, but plans have been postponed.

We have not organized a seminar for teachers about how to avoid and handle "difficult" situations.

Better PhD student education for all

We have discussed aspects of the Festa toolkit that could be implemented. We have noted that some of the recommendations in the Festa toolkit are already been followed in our PhD education. For example, PhD students already discuss teaching duties with their senior team,

and meetings of PhD supervisors are already implemented at the Department and discussed by the FUAPs. We have also organised a seminar by Ulrike Schnaas (Division for Quality Enhancement, Academic Teaching and Learning) on gender aspects in PhD supervision.

We have contacted doctoral boards at IT and Teknat to disseminate work by the equal opportunities group.

Career development from an equal opportunities perspective

We have discussed the possibility to organise a retreat to write applications for promotion. This has been a successful activity in the past. Since, at present, there are only two female associate professors and no female assistant professor, the group decided to postpone this activity.

We have also discussed the possibility to include the organisation of a retreat in the Department's plan to support faculty staff with assistant professor positions.

We have been keeping track of projects related to gender and work environment conducted at our Divisions and have invited Heads of Divisions to present results at the equal opportunities fikas.

Supporting equal opportunities aware research

We have discussed to set up a new call for funding to support how to formulate and work with aspects related to equal opportunities in research project proposals. We have invited Nina Almgren and Karin Stensjö at an equal opportunities fika to discuss Teknat's plans in relation to how to support inclusion of equal opportunities aspects in research proposals.

We have discussed plans to invite someone from Vinnova at a Department Strategy Day on research, both within the equal opportunities group and within the PAP group. We have also discussed how the next Department's Strategy Day on research could have a focus on equal opportunities. Since the Department strategy day has been postponed, this will be discussed again in 2021.

Equal opportunities budget allocated in 2020

The Equal Opportunities Officer performs duties at 10% of full-time employment. This time was funded by the equal opportunities budget at the Department.

Funding awarded to equal opportunities projects in 2020: 373 265 SEK

Quantitative description of current situation

Employees* at the Department of Information Technology as of 31.12.2020

Total employees	Women	% of women out of 270	Men	% of men out of 270
270	71	26%	199	74%

*At least 20% of FTE.

Number of people employed until further notice at the Dept. of IT as of 31.12.2020

Full-time employees	Women	% of women out of 241	Men	% of men out of 241
241	66	27%	175	73%

Leave at the Department of Information Technology 2020

Total employees on parental leave and temporary parental leave at some time during the period 1 January–31 December 2020

Parental leave	Women	% of women out of 47	Men	% of men out of 47
47	23	49%	24	51%

Percentage of employees on parental leave and temporary parental leave of total employees 1 January–31 December 2020

Parental leave	Women	% of women out of 270	Men	% of men out of 270
47 of 270 employees = 17%	23	8%	24	9%

Sick leave at the Department of Information Technology 2020

Total employees on sick leave at some time during the period 1 January–31 December 2020

Sick leave	Women	% of women out of 76	Men	% of men out of 76
76	32	42%	44	58%

Percentage of employees on sick leave of total employees 1 January–31 December 2020

Sick leave	Women	% of women out of 270	Men	% of men out of 270
76 of 270 employees = 28%	32	12%	44	16%

Doctoral students 2020

Active doctoral students 2020	Women	% of women out of 124	Men	% of men out of 124
124	35	28%	89	72%

Doctoral student financing

	Women %	Men %
Total 124 active doctoral students during the year of part of the year	28%	72%
Doctoral studentship (full-time) 104 people	27%	73%
Externally employed doctoral student 9 people	44%	56%
Gainfully employed with affiliation to an HEI (external + MC) 4 people	25%	75%
No funding 6 people	33%	67%
Scholarships 1 person	-	100%
Doctoral grant 0	-	-

Total graduating with a Degree of Doctor or Licentiate 1 January–31 December 2020

Degree of Doctor	Women	% of women out of 12	Men	% of men out of 12
12 people	2	17%	10	83%

Degree of Licentiate	Women	% of women out of x	Men	% of men out of x
7	2	29%	5	71%

Total doctoral students on sick leave at some time during the period 1 January–31 December 2020

Sick leave	Women	% of women out of 35	Men	% of men out of 35
35 people	14	40%	21	60%

Percentage of doctoral students on sick leave of total doctoral students during the period 1 January–31 December 2020

Sick leave	Women	% of women out of 104	Men	% of men out of 104
35 out of 104 doctoral students with a doctoral studentship = 33%	14	13%	21	20%

Students

Registered students at first cycle during 2020

	Women	% of women out of 4,976	Men	% of men out of 4,976
4,976	1,752	35%	3,224	65%

Registered students at second cycle during 2020

	Women	% of women out of 1,657	Men	% of men out of 1,657
1,657	499	30%	1,158	70%

Communication activities

The department's communications officer was on sick leave at the beginning of the year and left their post in March. Until Victor Kuismin was recruited as our new communications officer at the end of October, minimal communication activities were therefore conducted by a former doctoral student, administrator Liviana Gherghisan, and the head of department.

During the two months Victor Kuismin was with us in 2020, most of his focus was on familiarising himself with the organisation and speaking to colleagues in order to obtain a firm grasp of what the Department of Information Technology requires of its communications officer.

On our social media accounts, suitable posts have appeared on Facebook, so far amounting to a post every other week. In a normal situation (without COVID-19), things would have been different as there would have been more events of interest to external parties. We have also come to the conclusion that Twitter would provide a useful channel for raising the profile of our researchers and for ensuring that external parties can easily find information. The implementation of IT's Twitter account will take place sometime during 2021, as it has not had a high priority.

We began working to identify an alternative platform for internal communication and collaboration, given that the use and usability of the Staff Portal is below par. Discussions have therefore been initiated with UIT and the University Library to study how their wiki works. This work remains ongoing into 2021.

Due to the current situation, help is being offered to researchers who wish to take part in the digital version of SciFest, which will take place in March 2021. The communications officer came up with idea of publicising future SciFest stands on our website in an effort to create added value by raising the long-term profile of education and research. In total, three groups chose to register to participate.

Internal communication and news is posted daily on the MP blog and a weekly newsletter is sent out every Thursday summarising the MP blog (Liviana Gherghisan compiles the

newsletter). Learning the department's wiki tool and beginning to publish news on the Department of Information Technology website.

Regular meetings with the head of department regarding communication planning, at which a list of priorities for ongoing communication projects will be agreed.