

# **Department of Philosophy and History**

Self-evaluation

Head of Department: Associate Professor Sabine Höhler

Included divisions:

Division of Philosophy

Division of History of Science, Technology and Environment

## Department of Philosophy and History

### 1. Overall analysis and conclusion; strengths and development areas

#### a. Limited SWOT-analysis

	Strengths	Weaknesses
<b>Research</b>	<ol style="list-style-type: none"> <li>1. Multidisciplinary, multinational and well-integrated research environment</li> <li>2. Excellence in acquiring external funding, incl. several large EU-funded projects</li> <li>3. Strong publication record</li> <li>4. High societal relevance and impact, capturing important themes of social and environmental sustainability</li> <li>5. Successful PhD training</li> </ol>	<ol style="list-style-type: none"> <li>1. Limited core funding to replenish and develop faculty to sustain the growing research operation</li> <li>2. Limited research collaboration within the school and the organization</li> </ol>
<b>Organisation</b>	<ol style="list-style-type: none"> <li>1. Diverse and collegial work environment, visible and attractive to international colleagues and guests</li> <li>2. Transparent and flat leadership, frequent meetings and exchange</li> <li>3. Strong engagement in societal debate, serving multiple audiences</li> <li>4. Outstanding international collaboration</li> </ol>	<ol style="list-style-type: none"> <li>1. Unbalanced and uncertain funding situation, low returns on education, and large dependence on external funds</li> <li>2. High university overhead costs, high co-funding demands</li> <li>3. Unbalanced size of divisions</li> <li>4. Low degree of collaboration between the divisions</li> </ol>

#### Development Areas, top 5

1. **Humanities at KTH:** Develop the presence and significance of the humanities at KTH and ABE according to KTH Development Plan 2018-2023. Work towards the recognition of the humanities' importance in the education and future professional engagement of engineers in society, to build responsible leadership. A Masters program would be an obvious step.
2. **Cooperation:** Explore fields of cooperation in and beyond the department, to be sustainable at ABE and KTH. Pool research interests and competences and reach out to new partners in and outside of academia.
3. **Beyond Philosophy and History:** Continue working towards inter- and transdisciplinarity to contribute to sustainable transitions. Continue to reflect on the affordable scope of multidisciplinary under conditions of funding uncertainties and risks of diluting core competences.
4. **Funding:** Develop a more stable funding situation. Aim to acquire more basic funding from KTH, as well as long term platform grants and donations from private funders.
5. **Faculty Development:** Build a solid faculty that can meet generational shifts and stabilize core operations while hosting temporary researchers and research projects. Reflect on and, when indicated, adjust the balance between the number of faculty members and a growing number of researchers relying on soft money.

#### b. Summary statement on contributions of department on impact, infrastructure and sustainable development

- **Impact:** High societal impact and visibility through informing and engaging civil society, participating in societal debate, giving policy advice and affecting policy changes. Influence on research policy; university governance; climate, media and energy policies.

- **Infrastructure:** The Environmental Humanities Laboratory (EHL) and the Posthumanities Hub have built up highly visible collective research networks with outreach and impact beyond academia, utilizing nontraditional media for scholarly publishing.
- **Sustainability:** High-profile work on environmental philosophy, history and humanities aiming at analysis, achievement and improvement of SDGs; research and initiatives on energy transitions, climate change, environmental governance, behavioral change, emission goals, engineering solutions, and engineering ethics.

## 2. Research profile

### a. General information of the department

The Department of Philosophy and History is composed of the Division of Philosophy and the Division of History of Science, Technology and Environment. The department is one of six departments at ABE School of Architecture and the Built Environment, one of five schools at KTH. The department is also the place at KTH and ABE where research in the humanities is most concentrated and distinct.

At the end of 2020 the department had ca. 70 employees of which ca. 1/3 were employed at Philosophy, 2/3 at History. The department is led by the Head of Department/Prefekt (currently from History, with the Deputy-Head of Department from Philosophy) who represents the department in ABE's steering council. The two divisions maintain largely separate operations led by the Heads of Division. The divisions' economies are also separate. The shared economy part concerns the overhead budget which covers common departmental functions and infrastructures. Partly joint departmental functions are leadership, administration, directing undergraduate studies and directing graduate studies. The latter function concerns running the joint departmental PhD program "Studies in the Humanities and Social Sciences of Technology, Science and the Environment", where leadership alternates and where collaborative meetings occur regularly, including both subject fields.

### b. Central research questions and themes, knowledge gaps addressed, main research activities

Research at the **Division of Philosophy** covers a broad variety of topics, questions and themes, but its main overall focus is philosophical aspects of technology and its role in society. Research areas include

- Philosophy of technology
- Philosophy of risk
- Ethics of technology, particularly social and environmental aspects of the built environment, biotechnology, climate mitigation, artificial intelligence, sustainability
- The ethics, methodology and epistemology of institutional decision making

The division also has a strong presence in more theoretical areas of philosophy:

- Philosophy of science, particularly in the methodology and epistemology of scientific modelling
- Logic and formal semantics
- Formal epistemology
- Decision theory and the philosophy of economics

This mixture of applied and theoretical themes is the division's hall-mark. Although a fairly small philosophy division, the competences are broad. Apart from the core competences of philosophy, faculty and research staff members have degrees or long working experience in law, civil engineering, toxicology, computer science, environmental science, risk analysis, and cognitive science.

A substantial portion of the research at the division is multidisciplinary and is done in collaboration with researchers from other areas, as well as decision makers in the EU, the Swedish government, and Swedish municipalities. Ongoing projects collaborate with researchers specialized in traffic safety, genetics, molecular biology, climatology, geology, clinical medicine, computer science, and environmental economics, as well as with decision makers at The Swedish Transport Administration and in several municipalities. For instance, the project SEA-RIMS (PI Per Wikman-Svahn), which addresses ethical aspects of mitigating sea-level rising due to climate change, is performed in col-laboration with the Swedish Geotechnical Institute, the Council of the Baltic Sea-states, two

regional governmental bodies, and six municipalities. Another example is Ethics in Biodiversity Offsetting which addresses ethical and legal aspects of biodiversity offsetting, which involves collaboration with environmental lawyers, NGOs as well as decision makers at national and local level.

Philosophy is traditionally a male-dominated subject which comes with a myth of the philosopher as the “male-genius”, often fostering a rather aggressive culture. The division actively tried to counterbalance this image in recruitment and in fostering a more inclusive culture. The non-traditional focus on applying philosophy to problems that are of direct relevance to society may attract more female researchers. Of the 7 researchers currently employed, 3 are female. Among the 7 PhD students, 3 are female. At the level of faculty there is room for improvement. Among the 4 faculty of 4 members, 1 is female. The division has 2 professors, both male.

Research at the **Division of History of Science, Technology and Environment** addresses scientific, technological and environmental developments in their social and cultural contexts and impacts in the modern period, with a focus on the 20th and 21st centuries:

- Sustainability studies/Anthropocene history/Science history and politics of climate change
- Environmental humanities (since 2012) and Posthumanities (2018-2021)
- History of natural resources, resource extraction & management
- History of infrastructures & large technical systems, including data processing and media systems
- Cultural/industrial heritage studies, industrial archaeology
- Arctic and Polar history
- Energy, water, waste – their historical sciences, technologies, politics and governance
- Environment and migration – their cultural and social histories
- Urban ecology, urban studies
- (Environmental) media technology and communication, film and visual environmental studies
- Research policy, higher education studies & innovation studies

With a unique combination of strong research cores arranged around broad contemporary questions of human-environment relationships the division has furthered a broad humanities research agenda for sustainable development. Research approaches are integrative, informed by Science and Technology Studies (STS), political ecology, cultural theory and media studies. Research is cross-disciplinary with a transnational or global historical perspective.

Since 2012 the division has experienced a considerable growth in external funding and in the numbers of co-workers, beginning with the founding of the Environmental Humanities Laboratory (EHL) in 2011, enabled by a private donation. The EHL helped launch the participation in the new international field of the environmental humanities. The division contributed actively to shape this field while maintaining its historical focus. Participation in the Marie Curie ITN “Environmental Humanities for a Concerned Europe” (ENHANCE) (2015-2019), together with Leeds University, the Rachel Carson Centre in Munich and the Deutsches Museum in Munich, brought four PhD candidates with backgrounds other than history (environmental humanities anthropology, sustainability studies) to the department’s PhD program. Multidisciplinarity has benefitted the division also in the field of polar research, which combines history of technology, environmental history, social and cultural history and industrial heritage studies. The division became the hosting partner of a Nordic Centre of Excellence in Arctic Research, funded by Nordforsk (Oslo) and in collaboration with 14 other partners in eight circumpolar countries (2016). In 2015, the program Making Universities Matter (MUM), funded by Vinnova and in close collaboration with Lund University and Technopolis Group Ltd (UK), invigorated research policy as a core area of investigation, with the appointment of a guest professorship in Research Policy. The successful broadening of environmental issues is demonstrated by three ERC grants on environmental, energy and polar research that researchers at the division received between 2016 and 2018.

The division’s research focus on environmental sustainability and justice attracts international scholars, both women and men. At the turn to 2021 the division counts close to 50 co-workers pursuing a total of 50 research projects (of various size) and with a turnover of 45 MSEK (2020), of which some 10 % is KTH core funding, 5 % is funding based on research performance, publications and PhD education, and 10 % is competitive funding KTH provides as co-funding for ERC projects. Hence, 80%

of research income is from external sources. All faculty members and nearly all researchers lead research projects, some individual but most involve several colleagues across career levels, including postdocs and, if funding allows, PhD students. The division has become increasingly more multinational and multilingual. Roughly 50 % are born outside of Sweden and about 40% are women. The division attracts a growing number of guests and visiting scholars from all over the world.

c. Contributions to the advancement of the state of the art within the research fields of the department

The Department of Philosophy and History differs from a traditional humanities department. At an institute of technology, the divisions specialize in scope, focus and expertise. We comment on modern science, technology and their societies, built environments and socio-technical infrastructures, targeting present-day societal problems. Our research is of high societal relevance and impact, capturing important themes of social and environmental sustainability, e.g., climate, resources, energy, and bioscience. Our work is inter- and transdisciplinary, and we believe it is also transformative: it transforms others, ourselves and the humanities more broadly, and it contributes to societal transformations. Research is situated at the edge of our traditional disciplines, which we advance by developing new research fields and methodologies, e.g., the environmental humanities, posthumanities, Anthropocene history, and the ethics of traffic safety or radiation protection.

The Division of Philosophy is heavily focused on publishing research in international journals that employ the system of peer-review, to contribute to the international state of the art within the research fields of the department. For instance, PhD-students do not write monographs, but are instead expected to produce a dissertation consisting of 4-6 articles that are published, or at least are publishable in such journals. This has been successful, roughly around 75% of the articles included in the PhD dissertations have been published by the time the PhD student is finished. The division strives to publish research both in traditional philosophical journals (e.g., *Ethical theory and Moral Practice*, *Philosophical Studies*, *Analysis*, *Journal of Philosophical Logic*) but also – importantly – in non-philosophical journals so as to reach researchers outside of philosophy (e.g., *Journal of Risk Research*, *Energy Policy*, *Artificial Intelligence*). In all, publications cover more than 100 articles and papers between 2016 and 2020, including 21 by PhD students. In addition, in this period researchers at the division produced five edited books (the latest a handbook on Vision Zero – so named after the goal of zero dead in traffic – the first comprehensive treatment of Vision Zero in public policy) and two monographs.

The Division of History has developed integrated humanities research in defining and transformative ways. Through widening of scope, diversifying and increasingly claiming stakes in education, society and politics, the division works strategically to carve out a way forward for humanities scholarship in a school of technology facing the Agenda 2030 decade. Since RAE2012 the division witnessed profound internationalization and successful grant acquisition, paralleled by an increasingly global scope of its research and collaborations. The division enhanced research diversity while maintaining its core focus in history, which has led to novel and often quite unique combinations of approaches and research outputs, e.g. in integrated polar research that draws on political science and material cultural studies; in the climate humanities that range from climate monitoring to climate migration studies; or in the visual environmental humanities including film, art and activism. Collaborations with KTH Water Center, KTH Sustainability, KTH Energy Platform, StandUp Strategic Energy Research, Architecture, and Learning are close. The publication record has grown stronger and more diverse while retaining strength in Swedish publications. The division increased engagement and influence in its wider international academic communities, closest academic networks, e.g., Tensions of Europe, and societies, e.g. Society for the History of Technology (SHOT) and European Society for Environmental History (ESEH). Since 2012 the division offered a venue of exchange by organizing and hosting several large conferences (7<sup>th</sup> Tensions of Europe meeting 2015; political ecology conference “Undisciplined Environments” 2016; environmental humanities conference “Streams” 2020 and 2021).

d. Quality and quantity of contributions to the body of scientific knowledge

The department’s publication profile is only partly discernible in the bibliometric data for RAE2021. It treats philosophy and history as one although they have different publishing traditions and track records. Moreover, RAE bibliometrics does not pay necessary attention to the publication outlets and formats and the circulation and citation of published material in the humanities.



Figure 1. Publications in DiVA

Implications: i) Only a limited portion of our publications, those listed in WoS and Scopus, are included in our citation count. ii) All data are absolute numbers which obscures the relationship between research output and core funding. Our estimated peer-reviewed research output is comparatively high in relation to core funding (10% as per above). High is also our external research income which enables us to, nonetheless, maintain an intense publishing pattern. iii) Our publishing style is a mix of co-authorship and individual authorship. The latter is necessary to build a career in the humanities and we maintain it in multiple ways as part of our quality work. Hence, the indicator for co-authorship as a proxy for 'collaboration' is misleading for our department. Collaborate we do, but mostly in other ways than writing papers with our non-academic partners.

Consequently, we have no good coverage of our citation patterns. Google scholar gives more adequate information than WoS or Scopus data. This notwithstanding, based on WoS data we have individual researchers ranking among the top ten scholars in their fields according to the Stanford standardized citation metrics ranking (Ioannides et al 2020, <https://doi.org/10.1371/journal.pbio.3000918>), one in History, one in Philosophy (these two humanities scholars are in fact the highest ranked in KTH). Compared to Swedish philosophy and history departments, our (admittedly not detailed) impression is that the department fares well in research volume, visibility, and impact from research. We pay attention to patterns and strategies of publishing to enhance circulation and impact. We train PhD students and postdocs to select formats and outlets carefully.

#### Sample publications Philosophy:

Zetterberg, C. and **K. Edvardsson Björnberg** (2017) "Time for a new EU regulatory framework for GM crops?", *Journal of Agricultural and Environmental Ethics* 30(3): 325-347.

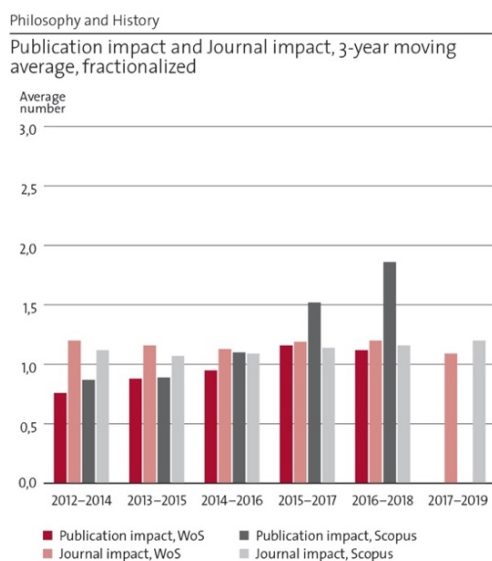
**T. Grüne-Yanoff** and R. Hertwig (2016) "Nudge versus boost: How coherent are policy and Theory", *Minds and Machines* 26 (1-2): 149-183.

**S. O. Hansson** (2017) "Science denial as a form of pseudoscience", *Studies in History and Philosophy of Science*, 63: 39-47.

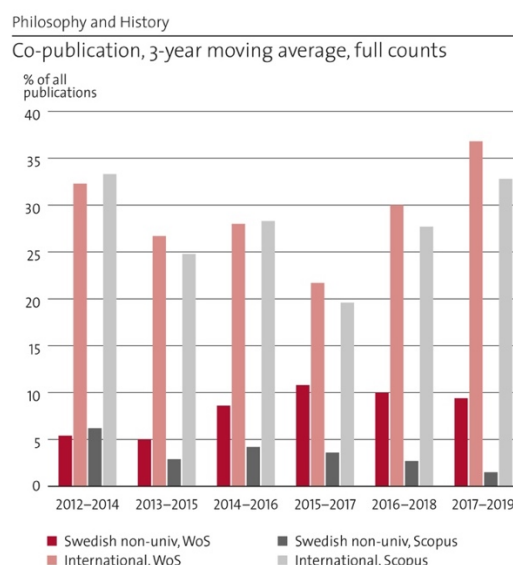
**J. Cantwell** (2018) "Making sense of (in)determinate truth: the semantics of free variables", *Philosophical Studies* 175(11): 2715-2741.

**T. Sandqvist** (2018) "Preservation of Structural Properties in Intuitionistic Extensions of an Inference Relation", *Bulletin of Symbolic Logic* 24(3): 291-305.





*Figure 2. Publication impact and journal impact*



*Figure 3. Co-publication*

Since RAE2012, the Division of History has gradually moved towards publishing scientific articles in international journals and university press books. This is in line with a general trend in Swedish humanities, although far more pronounced. Outlets include broad-spectrum high-impact journals such as *Science*, *Nature*, *Nature Climate Change*, *Climatic Change*, *Global Environmental Change*, as well as disciplinary flagship journals such as *Isis*, *Technology & Culture*, *History & Technology*, *Environmental History*, *Environment and History*, and cross-cutting thematic journals, e.g., *Social Studies of Science*, *Energy Policy*, *Polar Journal*, *Minerva*. In the previous decade, the output of peer reviewed journal articles, books and book chapters (combined) by division members grew from 9 in 2010 to 83 in 2019. At the same time, division members maintained a high profile of publishing in Swedish for wider audiences, policy, and public and civic discussion.

#### Sample publications History:

**Marco Armiero** & Richard Tucker, *Environmental History of Modern Migrations* (London and New York: Routledge, 2017).

**Per Högselius**, **Arne Kaijser** & Erik van der Vleuten, *Europe's Infrastructure Transition: Economy, War, Nature* (Palgrave Macmillan 2016, published as one of six volumes in the award-winning Making Europe book series).

**Sabine Höhler**, *Spaceship Earth in the Environmental Age, 1960-1990* (London: Pickering & Chatto 2015).

Will Steffen, Katherine Richardson, Johan Rockström, Sarah E. Cornell, **Sverker Sörlin** [et al], "Planetary boundaries: Guiding human development on a changing planet", *Science* 347(2015): 6223, pp. 736-746.

**Sverker Sörlin** & **Nina Wormbs**, "Environing Technologies: A Theory of Making Environment," *History & Technology* 34(2018):2, pp. 101-125.

e. Engagement in national and international research collaboration within academia and its outcomes

The department is engaged in a number of large, mostly international, projects and programs, often as lead or hosting institution. We organize much of our work in broad multi-year projects, sometimes with considerable 'deep' interdisciplinarity, sometimes with non-academic institutions, and with experimental and outreaching formats for mobilizing public and stakeholder participation and presenting results.

The Division of Philosophy cooperates e.g. in the project Mistra Biotech with the Swedish Agricultural University, Lund University, and Umeå University. As part of the Stockholm Centre for Health Care Ethics, CHE, the division works with Stockholm University and Karolinska Institutet. In the project

Modal modelling in Science, the division works with the University of Vienna, University of Stirling, and LSE. In the project Boosts vs nudges, the division collaborates with the University of Helsinki and the Max Planck Institute for Human Development in Berlin.

The Division of History cooperates on various levels. On a strategic level the division cooperates with crucial players in the field of the environmental humanities, such the Rachel Carson Center in Munich and the Center of Culture History and Environment in Wisconsin; the Max Planck Institute for the History of Science in Berlin which runs the Anthropocene Campus and Curriculum, a worldwide multi-year collaboration supporting engagement in the Anthropocene debates since 2014. Strategic cooperation collocates the division's research environment on the global map. The division upholds capacity building cooperation where it is involved in supporting the development of research environments elsewhere, as e.g. the Roma Tre University and the Swiss Environmental Humanities Hub, or the project CHEPIS (Center for Higher Education, Policy, and Innovation Studies), a SIDA funded five-year advanced postgraduate training program with seven PhD students (two enrolled at the division) and one postdoc pursued in collaboration with U Eduardo Mondlane, Maputo, Mozambique and U of Western Cape, South Africa. Societally engaged cooperation has led division members to work closely with non-academic partners, such as grassroots organizations, local authorities, cultural institutions and governmental institutions, e.g., CLISEL, a Horizon 2020 project involving U Bern, U Lancaster, U Cagliari, and the Association of Local Authorities of Sardinia region. Societal cooperation has a cyclic dimension; it transfers scientific knowledge to societal actors, and it changes the ways in which knowledge is co-produced. Finally, the division engages in instrumental cooperation in relation to research projects which require specific knowledge and expertise. This cooperation is limited to projects but may lead to stable collaborations. An example is the division's engagement in the NordPlus-funded project Bringing Research Into Green Humanities Teaching (BRIGHT), a collaborative teaching initiative involving partners across the Northern and Baltic regions hosted by the Greenhouse at U Stavanger.

Members of the History division have conducted research visits as fellows at Institutes for Advanced Study (or similar), often with considerable impact on the research profile and output of scholars during and after their visits. Among those are IAS Princeton; the Princeton Environmental Institute; Rachel Carson Center, Munich; KRITIS at TU Darmstadt; CAS at the Academy of Sciences, Oslo; Peder Wall Center, UBC Vancouver; Netherlands IAS in Wassenaar (now Amsterdam).

#### f. Follow up from previous evaluations

In RAE2012 and RAE2008, our department was evaluated as a unit combining the Division of History and the Division of Philosophy. Our research unit was ranked excellent/AAA, together with 14 other excellent units at KTH, which resulted in more core research funding to both divisions.

The assessment panel's recommendation to "develop a long-term strategy on how to maintain this very high level of performance in the light of the problem of the medium-term succession of several of their key leaders" has posed an ongoing challenge, especially the aim of faculty renewal and long-term faculty stability. Philosophy has not recruited new core faculty since 2012 and lost 2 faculty members during this time. History recruited 2 associate professors in environmental history but lost 3 faculty members, one because of retirement. We are presently recruiting an externally financed assistant professor to the Division of History, and we hope to recruit 2 associate professors (1 in Philosophy, 1 in History) and 1 assistant professor (History) to the department, on a mixed funding of internal and external sources.

Another recommendation in both RAE2008 and RAE2012 was for KTH to find ways to utilize the expertise of these two divisions in undergraduate and master level teaching. This recommendation has been left unheeded in KTH, despite efforts from the department to energize the process. Despite a couple of examples to the contrary, the predominant trend has been a downward one: instead of strengthening our position in KTH's engineering programs, our courses have on multiple occasions been sacrificed in the context of restructuring of programs – also by departments in our own school.



### 3. Viability

#### a. Funding; internal and external

The department receives its research funding from external sources in Sweden and the EU (as yet little from funders beyond Europe). We have a marked profile towards the most competitive theoretical and high end ('basic') research funders, notably the Swedish research council (VR), Riksbankens Jubileumsfond, the Swedish Agency for Sustainable Development (FORMAS), the Swedish Foundation for Strategic Environmental Research (MISTRA), and increasingly the European Research Council.

Broader calls are more common, and interdisciplinary competencies in demand. Given our narrow core funding for research and teaching we have over the last 15 years explored a conscious strategy to broaden our expertise in the adjacent humanities (and to some extent social sciences and artistic research) in order to tap into these sources. We have built efforts to shape research teams and craft proposals with a mix of internal and external scholars. We have developed processes for assessing external proposals for collaborations, thereby broadening our networks and our base of expertise and competitiveness, and enhancing our opportunities to learn from others.

The more successfully our strategy works, the more precarious the relation has become between core funding and competitive grants. The critical factor is the lack of mechanisms with which to acknowledge and support excellent research performance and link it strategically to a conscious effort to build the presence of humanities and social sciences at KTH. Despite our large access to external funds, we experience a lack of freedom to use resources pragmatically, which constrains, in our view unnecessarily, for example our ability to co-fund PhD students on their 4-year full-time positions.

Philosophy and History

Sources of research income (2012, 2016, 2020)

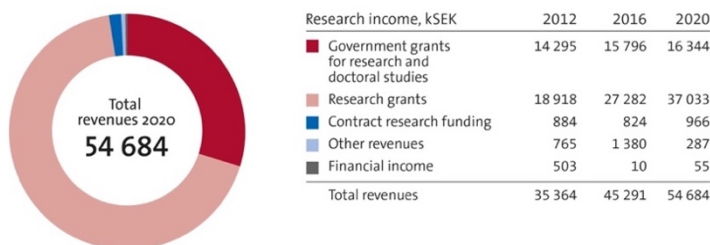


Figure 4. Sources of research income (2012, 2016, 2020)

#### b. Academic culture

The department works towards openness and inclusivity by fostering a multiplicity of disciplinary perspectives and identities. We can still improve on gender balance, and we remain a rather white Northern and European environment. We are improving at the PhD and postdoc levels with co-workers from Asia and Africa, but wish to work more on global inclusiveness. To the annual division retreats, typically 1-2 days per year, all co-workers are invited, including fellows and guests. These well-attended gatherings provide opportunities to discuss work environment and division strategies.

The department trains research integrity and research ethics and fosters integrated research. Both divisions hold research coordination meetings, typically once every term, and aim to meet new research grant calls across the individual backgrounds and subdisciplines of our researchers. The focus of these meetings is on communicating and sharing approaches that enable identifying new topical constellations. Both divisions also run a colloquium series to discuss new research, hear thought leaders in our core fields, and to integrate PhD students and postdocs into a critical and understanding community of scholars. We work actively with the quality and the variety of our staff. We foster competence-building of our young and mid-career scholars, to meet the constraints of postdoc and temporary researcher employments (e.g., teaching experience; language, pedagogical and management training). Development talks and performance reviews are offered annually to all our co-workers. Both divisions maintain a collegial leadership structure. Our steering groups are composed of representatives of all levels of employment, faculty, postdocs/researchers, PhD students and administration. Meetings are held two to four times every semester.

The Division of History drafts five-year strategic plans since 2005, so far 2007-2012, 2012-2017, and 2017-2022. Conscious, democratically anchored strategy work has helped to think deeply and collaboratively on what the division can become, and what difference it can make, to historical

knowledge, to society, to KTH and to the department as a leader of intellectual and institutional development in the humanities. History also regularly reports on its activities in inclusive biennial division reports (most recently *Defining Humanities*. Report 2017-2018, published 2019). The 2019-2020 report is currently in preparation.

c. Current faculty situation

Current faculty at the Division of Philosophy consists of 2 full professors (male) and 2 associate professors (1 male, 1 female). A full professor (male) retired in 2018. Age-wise, the span is 47-53. The female associate professor can be expected to be promoted to full professor within 1-2 years. Given the age profile, the division needs to recruit younger researchers.

Current faculty at the Division of History consists of 3 full professors, 1 in Environmental History (M 1956, retiring in one to four years), 2 in History of Technology (F 1968, M 1973), and 2 associate professors, 1 in Science and Technology Studies with Historical Orientation (F 1966), and 1 in Environmental History (M 1966, also director of the EHL).

The department’s current faculty is unbalanced with regard to gender, a situation which we aim to relieve through promotion and conscious recruitment. The faculty provides skills and capacity to maintain supervision, research leadership and abilities to think and act strategically. However, these capacities rest more on individual properties of our small faculty than on its collective size, which is modest in relation to the total staff of 77 employed through 2020, including 18 PhD students, 24 researchers, 9 postdocs, 9 research engineers, 2 guest professors, 1 adjunct professor and 4 administrators. We have tried to compensate for this imbalance by hiring guest professors to the department (4 in the past 5 years), and by affiliating professors (1 in the past 5 years) and adjunct professors (2 in the past 5 years).

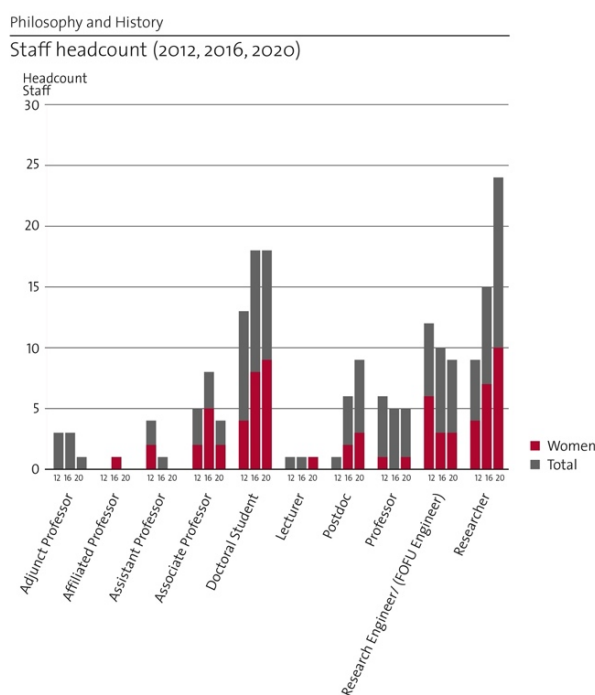


Figure 5. Staff headcount (2012, 2016, 2020)

We are presently recruiting an assistant professor in History of Media and Environment, based entirely on external funding and including some co-funding requirements (WASP-HS The Wallenberg AI, Autonomous Systems and Software Program – Humanities and Society). We plan to apply for permission to open permanent positions in Ethics, in History of Science, and in Environmental Humanities with Historical Orientation, on the assistant and associate professor levels, to renew our faculty and continue building capacity according to our needs and strategic visions. The process for hiring new faculty rests largely on the amount of long-term core funding and the amount of long-term teaching commissions – none of which we have to a considerable extent. It is typically not considered desirable to hire new faculty members based on external funding, nor is there a substantial relationship between growth of external competitive funding and the size of core funds.

d. Recruitment strategies

Recruitment of PhD students follows KTH’s formalized procedures which ensure that principles of diversity and equality are maintained. Recruitment committees are formed by a gender-balanced and position-balanced group of colleagues. For new faculty, recruitment follows a strictly prescribed process based entirely on external evaluation. Post-docs and researchers are exclusively project-funded. To avoid imbalanced hiring to projects we involve larger circles of colleagues in the selection process.

Project leaders are informed and aware that a hiring process must have a balanced committee in place, often including non-project members for the interviews of short-listed candidates.

#### e. Infrastructure and facilities

The KTH Environmental Humanities Laboratory (EHL) (founded Dec 2011) is embedded in the research organization at the Division of History. The EHL brings humanities and social science research to bear on socio-ecological challenges and fosters just sustainability. The Lab fosters transdisciplinary public engagement and has become a global player in the rising field of the environmental humanities, with an international network of academic and societal collaborations, now across all continents. Areas of action include research on environmental change and social innovations, environmental justice, ecological democracy and environmentalist movements; co-publishing the *International Journal of Environmental Humanities* (Duke Univ. Press); training in environmental humanities, political ecology and visual studies; and outreach activities involving students, civil society organizations, policy-makers and the public. Initiatives include the annual Stockholm Archipelago Lecture; the CrossCuts Film Festival; the organization of two large conferences (> 500 participants); and the public environmental humanities projects on climate change in the city and toxic autobiographies. Some thirty scholars have spent research stints with the Lab.

The Posthumanities Hub joined the Division of History from 2018 to 2021 as an experimental effort to break new ground in integrative humanities. The Hub linked to artistic research & design, with strong outreach; it used nontraditional formats, like film and fiction, stakeholder engagement, and interaction with social, popular movements; it worked to supplement the profile and brand of KTH as a technical university, to enhance attractiveness, especially among potential female students, and create new pools of talent.

The Lab has been growing organically, mainly through external funding. It was made possible by a private donation and is now supported by KTH core funding. The Posthumanities Hub was funded through a three-year guest professorship by KTH and external grants. The Lab is a significant innovation, but financially vulnerable. It needs infrastructures, internal organization, event coordination, communication and web maintenance.

The Division of Philosophy closely collaborates with KTH Live-In Lab, a full-scale test environment for advanced technologies in the home. Many modern IT-solutions involve potential conflicts with privacy and integrity and a relatively controlled environment provides a setup for examining to what extent these conflicts are realised.

## 4. Strategies and organisation

### a. Goals for development 5–10 years ahead

The department's short-term goals are to develop its faculty and to solidify its funding base, including expanded EU funding. In order to strengthen our collaboration between the divisions and within ABE and KTH we aim to increase our strategic efforts of identifying possible connections to establish cross-disciplinary cooperative modes of climate, environmental and sustainability research at KTH. Our medium-term goal is to work towards an increased role of the humanities at KTH; both in research, through an established platform of humanities and social sciences, and in undergraduate teaching, through a Masters program in the humanities developed in collaboration with our partners at KTH.

The Division of Philosophy aims to grow and to increase national and international interdisciplinary collaborations with an eye to wider outreach and societal impact. The division aspires to strengthen its position to be the leading Scandinavian hub for technology-centered philosophy.

The Division of History follows its current strategy: managing growth and consolidation; build up faculty and plan for a generational shift; work towards implementing multi- and postdisciplinarity while maintaining its profile; maintain strength, output, visibility and impact; increase cooperation with non-university partners; develop the publication strategy; sustain external funding flows (by increasing the share of EU funding); tap into new funding sources for the EHL; strive for a larger role in undergraduate education in cooperation with KTH partners, e.g. by opening up fields connecting science/technology to the wider field of integrated humanities; and continue to build the case for humanities knowledge as a key element in meeting societal challenges.

b. Congruence with university-level goals for “A leading KTH” as set out in KTH’s “Development Plan 2018-23” (page 5)

KTH’s Development Plan 2018-2023 envisions an “integrated KTH”, “strengthened by the fact that *all study and research programs are collected under a common scientific faculty* that, in addition to classic technical fields, also covers natural sciences, life sciences, architecture and design *as well as the humanities, social sciences and learning*” (p. 6, our italics). “Among technical universities, KTH in particular has the potential to contribute in the field of sustainability, having the conditions for taking a holistic view and systematic approach” (p. 12).

The strategic vision for our department is predicated on the clear articulation of humanities and social sciences as part of the future KTH, utilizing our strengths in the fields of sustainability, gender, diversity, and ethics research. Department members have collaborated in the presidential initiative HUMSAM@KTH that worked towards implementing humanities and social sciences research and teaching at KTH (a first report was delivered in November 2018). This ongoing conversation needs venues where a more advanced articulation of the presence of non-technical fields of knowledge can be pursued. It also needs leadership and direction. In our understanding, the future of the humanities and social sciences at KTH should be considered an overall strategic interest for the university. It should also be a core feature of the strategic vision of the ABE school which is the natural home for humanities at KTH.

c. Leadership structure and collegial structure

The department is led by a head from one division and a deputy-head from the other division. Leadership alternates between the two divisions, as does responsibility for the PhD program. There is no advisory group on the departmental level; each division has a steering group with wide representation. Monthly work-place meetings are held on the division level, as are the division retreats, research and strategy meetings. PhD students are organized on different levels with a focus on the division level, and with representation in accordance with KTH recommendations. Although line management is strong, the divisions’ steering groups work to form consensus that the heads of division use for decision-making. In practice, a collegial steering structure exists at the department.

d. Strategies for high quality

The department is situated in an academic environment and a research (funding) structure in which *both* research and publication quality control is performed *externally*, through peer review, since all our research is externally funded. We have worked on publication strategies on the division level, and we aspire to publish our work in highly ranked journals, and open access. OA is now facilitated by KTH centrally, through funding by the KTH library. Our PhD education comprises regular course evaluations and annual supervisor colloquia. We maintain evaluation routines of mid-term and final seminars in PhD education, inviting external reviewers. The publication formats of PhD theses are tailored to the topic and student in History where the compilation has become more common, but remains a minority. The compilation thesis is mandatory in Philosophy. History never hires its PhDs, a reform instituted about a decade ago. This has probably contributed to the high influx of new talent on the early career level and likely to the strong track record by KTH History PhDs as they have moved on to other universities at an early and formative stage of their careers.

The Division of Philosophy’s main quality strategy for research and research dissemination is its emphasis on publication in international peer-reviewed journals. The weekly research seminar is an important part of the quality process as most research papers pass through the seminar. Each semester the researchers meet to discuss upcoming projects and funding calls, with the ambition to provide support and to find common interests.

The Division of History has institutionalized work with project preparation and review, to secure maximum transparency and participation and to allow for coordination of ideas and external networks. This work includes an element of continuous monitoring and self-assessment and is led by a designated Officer of research planning and coordination, currently also deputy-head of Division. Some small core funding pays for extraordinary costs in preparing grant proposals. A vetting form ensures that projects are acceptable for submission. Internal quality work on texts has decreased over the years since the division diversified considerably and invited more international guests to its colloquium series. The

division aims to better organize text-work internally, paying attention also to organized application-writing.

## 5. Interaction between research and teaching

### a. Interaction between research and teaching at all three levels (BSc, MSc, PhD) of education

The department teaches comparably little on the undergraduate level, neither BSc nor MSc. We teach mostly elective and only few mandatory courses. Only a few courses are part of programs. Accordingly, student numbers are rather low in most of the elective courses. Having no undergrad teaching base to recruit from makes hiring processes cumbersome but probably enhances quality since we constantly supply our research environment with experiences and ideas from the outside.

Philosophy teaches engineering ethics, research ethics, philosophy of risk, decision theory, and philosophy of mathematics. Its course Theory and Methodology of Science (TaMoS) is mandatory in most master programs (ca. 1300 students per year). All the courses are closely tied to the area of specialization of the teacher. History teaches basic courses in history of science and technology and environmental history, informed by current STS and environmental humanities perspectives. Special thematic focus courses are e.g., Gender & Technology and Energy & Society. The course Swedish Society, Culture and Industry in a Historical Perspective is an elective but extremely popular course offering knowledge among exchange students on their new country of residence, its history, society, culture and other features (ca. 350 students per year). Parts of History's teaching (e.g., Energy & Geopolitics; Media, Technology and Culture; Science Goes Fiction; Energy Systems in Society; Computer History) are tightly connected to ongoing research. Examples are taken straight from empirical and theoretical work published by the teaching staff. An example of how teaching fuses with research is the textbook for the Energy & Geopolitics course (*Energy and Geopolitics* by **Per Högselius**, Routledge, 2018), which integrates teaching preparations with research results from the division's energy research. Accredited courses are relatively fixed; contents change according to course responsible teacher's expertise, while the intended learning outcomes are updated more rarely. The History Division established new courses according to research expertise (political ecology, environmental humanities, Environment and Society in a Changing Arctic).

Doctoral training and supervision are provided entirely by core-funding and sometimes by project funding (for fully-funded PhD students), which entails that teaching is closely related to research, including extracurricular summer schools etc.

## 6. Impact and engagement in society

### a. Relevance of research to society at large

The department engages in societal debate by communication and outreach, collaboration and policy advice. We work with civil society at large, less so individual sectors, industry or companies. We employ and foster the bottom-up perspectives of activists and communal/regional stakeholders and we work towards communal, national and international policy change. Our teaching directly impacts the future engineers who choose our courses, by providing them with a comprehensive set of abilities to meet the transitions ahead. Beyond the social and cultural competences and language, presentation, and communication skills which future employers increasingly request we educate students to reflect on and contextualize technological knowledge and practice historically, epistemologically, culturally, and ethically.

A great portion of the Philosophy Division's environmental research is of direct relevance to environmental policy and decision-making. This applies not the least to research conducted within the projects Sea-Rims (Formas, 2017-2021), Ethics in biodiversity offsetting (Naturvårdsverket, 2018-2020), Mind the Gap (Formas, 2016-2018), and Environmental co-benefits (2018-2019). A central aim of Sea-Rims (Formas) is to produce ethical analyses and tools that can be used to assist municipalities and county administrative boards in their climate adaptation decision-making. The project "Environmental co-benefits" resulted in a review article synthesizing the rapidly expanding knowledge of climate co-benefits that can improve decision making in the direction of increased sustainability. A core aim of "Mind the Gap" was to build knowledge among environmental decision-makers of how



denial of scientific evidence and knowledge can be used to deliberately slow down the environmental policy-process.

The Division of History has been increasingly active in current environmental and Anthropocene media debates, adding a humanities perspective to questions of climate change, individual and collective consumption patterns, or resource extraction industries. Research includes stakeholder perspectives of e.g., NGOs and local and indigenous peoples (e.g., Mistra Arctic Futures; REXSAC; Toxic Biographies). The EHL and the Posthumanities Hub highlight performative research in formats of art, museum exhibitions and activism. The Making Universities Matter (MUM) platform (Vinnova) continues the research policy work that Mats Benner (KTH/Lund U) and Sverker Sörlin (KTH) conducted in the Swedish Research advisory board. A most tangible outcome of such policy advice was the 2016 research bill with its current scheme of flexible, integrative calls from the Swedish research councils. Sörlin is one of eight members of the Climate Policy Council, an expert public agency installed in 2018 with the mission to evaluate annually the government's policies to reach the zero CO<sub>2</sub>-emission goals 2030 and 2045.

#### b. Research dissemination beyond academia

The department contributes debate articles and popular-science essays in the (Swedish) media, radio, TV, public panels and seminars. Topics are e.g., research and education policies, science scepticism, science/climate denial and current Anthropocene challenges.

#### c. Sustainability and the United Nations' Sustainable Development Goals (SDG)

Several of the Philosophy Division's research projects directly address sustainability and the SDGs. Mistra Biotech is an eight-year interdisciplinary research program focusing on the use of biotechnology in crop and livestock breeding, including regulatory and ethical aspects of GMO introductions. One of the core aims of Mistra Biotech is to contribute to a more sustainable and competitive agriculture, contributing to several of the SDGs, perhaps most notably SDG 2 (zero hunger) and SDG 15 (life on land). Crucially, not only the ecological aspects of sustainable development are covered by the division's research. Social sustainability aspects are addressed in several of the PhD projects, perhaps most clearly in a project funded by the Swedish Road Administration focusing on Vision Zero in road traffic safety (SDG 3, good health and well-being) and a project conducted in collaboration with the Swedish Defence University focusing on gender aspects in defence systems (SDG 5, gender equality). One faculty member (Edvardsson Björnberg) and two senior researchers (Wikman Svahn, Karlsson) have environmental and climate related issues as core research. Most of the externally funded projects (> 80%) relate directly to SDGs.

The majority of the History Division's research addresses social and environmental sustainability, not least since the foundation of the EHL in 2011 as a direct response to the increasing need and attention for broader environmental research. The EHL led an international team of researchers from Brazil, the United States, Turkey, Italy, and Sweden to investigate social innovations developed by civil society organizations and municipalities in five metropolitan areas in the Formas-funded project Occupy Climate Change (OCC!) on societal responses to climate change. In 2020, the project The Mediated Planet: Claiming Data for Environmental SDGs received funding in the new Formas program "Realising the global sustainable development goals". The division acts as ABE's representative in a research project on KTH's climate framework of carbon reduction. The division carries out projects on natural resource access and use, e.g., Arctic mining and sustainable development, or water management research linked to the KTH Water Center. Most of the externally funded projects (> 80%) relate to SDGs.

#### d. Structure for increased impact

We expect that future research (and teaching) will be increasingly multi- and transdisciplinary. The large Swedish and European funding institutions and funding programs have prompted us to transgress the traditional academic boundaries, to move beyond our peer communities and engage with societal actors and stakeholders. Academic work will have to be collaborative across sectors to address and meet societal challenges that are neither sectorally bound nor solved. For our research to make a difference we need to experiment with new research models and questions. As a humanities department at a technical university, we believe we are exceptionally well positioned to foster such ideas and aims of integrative and transformative research. We have shown that we can help create new



research environments. In the next decade, we want to be key also in defining new research agendas. To achieve this goal, we have established a generous collegial structure of identifying topical interests, exchanging ideas and experimenting with new combinations of methods. This structure has attracted and engaged a wide array of scholars, activists, artists and other non-academic partners to our projects, and we aim to further expand our work with communities, local authorities, governmental agencies, NGOs, companies, and the media. We have devised a publication strategy and are developing a communication strategy. To strengthen collaboration on the faculty level we aim to adjunct and affiliate partners from the non-academic sectors.

e. Impact cases

- 1) ROBUSTA Robust decisions to manage climate risks in Sweden (see attachment)
- 2) CHAQ Creating Cultural Heritage in Antarctica/CHAQ2020 Argentinean-Swedish expedition (see attachment)

## 7. Other

a. Specifics that the department wishes to mention and describe

Current and future challenges should stand at the heart of any large university. They require contributions in the humanities and social sciences, not least to support the teaching of students. We take the opportunity to emphasize that good technical universities, and especially the very best in the world, have a solid presence of the humanities and social sciences. They cultivate these fields according to a strategic vision, and they demand knowledge of these fields of their students to build responsible leadership. Our model to contribute to this vision for KTH is to cultivate the integrative humanities smartly adapted to KTH structures and needs. The department's position limits strategic planning to this effect unless it is coupled with the implementation of KTH's Development Plan.