STS Meeting in Stockholm, May 2-4, 2012

Abstracts (in order of appearance)

Thursday, May 3

9:00 – 10:30 Parallel sessions (Brinellvägen 64)

1A Environment and Technology
Room M32, 1st floor

Safe dams by and for whom? Supradisciplinary gender perspectives on large scale hydropower dams
Annika Idenfors and Camilla Sandström, Department of Political Science, Umeå University

This paper is a presentation of a subproject within the research project: “DAMMED: Security, Risk and Resilience around the Dams of Sub-Arctica” (Vetenskapsrådet, 2010-2012). The subproject contains a literature review as well as interviews with local authorities along the Ume and Skellefte rivers in Västerbotten in regard to the concepts of “dam safety” as well as “dam security”.

The literature review of research show a rather biased focus on technological artifacts – it is mainly about the dam constructions. There are no studies of the human-machine dimension in the daily operation of the dams and reservoirs. Also the safety/security issues in regard to “non-stationary” people (e.g. climbers, fishers, tourists) which could be in danger would there be a dam failure are largely absent. In addition there are hardly any studies on incidents related to regulated rivers such as drowning. This is a paradox since the few articles with a socio-technological perspective seem to agree that participation, of local, indigenous people and civil society is the solution to avoid many conflicts, social and environmental problems with dams.

As the comparative study of Skellefte and Ume River proceeds through interviews of local authorities on dam safety within the Västerbotten County in the Swedish part of Sapmi, the current dam safety concept is challenged. Departing from the human security concept (UNDP, 1994) based on a gender analysis approach as proposed by Hoogensen and Stuvøy (2006) in combination with supradisciplinary perspectives (Öhman et al., 2010), this study bring about a new understanding of dam safety from a postcolonial perspective. The preliminary findings reveal that indigenous communities are invisible and excluded in the dam safety work of many authorities. The knowledge of the local communities about the river and its behavior is not valued or considered while the dam owner’s technical knowledge is. Although drowning of people occur in the rivers, on weak ices or in strong flows of spill water, the authorities do not analyze these accidents in relation to the fact that the rivers are dammed.
Re-voicing Sámi resistance against hydropower exploitation in early 20th century: 
Erik Olofsson Rim
Agneta Silversparf, Silbonah Samesijdda / Centre for Gender Research, Uppsala University and May-Britt Öhman, Centre for Gender Research, Uppsala University

Erik Abraham Olofsson Rim, 1844-1920, was a Sámi, commonly remembered for allegedly having sold his land and water rights to the State Power Company, Vattenfall, for the first large scale hydropower plant, Porjus – on the Lule River in Sapmi, Sweden. When Erik is mentioned in historical books and PR-brochures about Porjus, his Sámi name “Rim” has most of the time been taken away, as well as his Sámi identity. He is instead referred to as the “old man” of Porjus.

At the time when the Vattenfall started showing interest for Porjus, Erik lived with his family off self-subsistence agriculture and from guiding tourists in the area. Erik disapproved of the selling, and claimed he had been deceived by Vattenfall. When the Porjus power station was inaugurated on February 8th, 1915, Erik was invited to the inauguration lunch along with several prominent guests. However, Erik opted to not attend, and to move from Porjus on this very day. In the contemporary media, referred to as the King of Porjus, he was accused of being greedy, doing this silent protest just to get more money out of the deal.

So far very little work in regard to Sámi resistance against hydropower exploitations in the early 20th century has been made. It has proved difficult to find examples. The intention of this paper is to revoice Erik’s story, as part of revoicing Sámi resistance against the hydropower exploitations in Sapmi. Furthermore, the presentation works along a tradition of decolonizing knowledge production process - related to continuance, healing and regeneration as suggested by Rauna Kuokkanen (2000). The study is based on archival documents, contemporary newspaper articles and earlier literature.

Constructing Pasts for Polar Futures : The Use of History and Heritage in Arctic and Antarctic Geo-politics
Dag Avango, Division of History of Science, Technology and Environment, KTH – The Royal Institute of Technology, Stockholm

1B Public Health
Room M33, 1st floor

Selling Diabetic Technology: Promise of freedom, control and health
Kirsten E. Gardner, University of Texas San Antonio

Since the discovery of insulin in 1921, diabetic technologies have been critical to diabetic care. Patients learned early how to sharpen needles for self-injection, perform simple chemistry to measure blood sugar, and dose insulin to control blood sugars. Over the decades, choices in medication, infusion, and self-testing have expanded enormously. In fact, the rhetoric of powerful diabetic technologies tends to overshadow discussions of a cure, and much of the public believes the technological fix has solved the impact of the disease.
This paper explores the history of diabetic technology, through a lens of consumerism and business. How have diabetics learned about new technologies and adopted them? How have companies responded to diabetic demands? How have they fostered notions of need when controlling a chronic illness? As one case study, blood glucose monitors -- one of the top selling diabetic technologies -- have contributed to a multi-billion dollar industry that is competitive, profitable, and highly commercial.

This paper offers a review of the U.S. print and media advertisements for diabetic products produced in the past three decades. It also offers a comparative perspective of how U.S. advertising trends compare with international marketing campaigns. As manufacturers of diabetic technology have begun to target consumers, advertisements have assumed key roles in diabetes education and promises of better health. Advertisers are constantly launching efforts to target a broader demographic and convince all patients that the blood glucose meter technology is the key to diabetes control.

Overall, the advertising campaign has been effective and the diabetic market has expanded enormously in recent years. The sales of blood glucose monitors demonstrate that some of the most sophisticated home medical management technology for chronic illness occurred in the field of diabetes. Although the cure still eludes researchers and the population of diabetics in the world continues to increase, the tools to control the disease have expanded. It is with these trends in mind that I turn to recent developments in diabetes to better understand how modern technology interacts with the body to prolong and sustain life.

This paper explores the introduction of diabetic technologies as consumer products. It examines how and why this medical technology has been legitimized by patients, manufacturers, and insurers alike. As diabetics strive to maintain stable blood sugars (ranging from 80-120) and avoid the “highs” and “lows” that often accompany this diagnosis, they are often promised technological solutions. How have such promises shaped contemporary ideas about the illness?

Trials of Value: On the Valuation Practices in Designing Medical Experiments
Claes-Fredrik Helgesson and Francis Lee, Department of Thematic Studies – Technology and Social Change (Tema T), Linköping University

What medical knowledge is worth pursuing? This is a crucial question in the field of medical research where choices in research design manifests a valuation of what knowledge is considered valuable and possible to realise. The question is of import since such choices has consequences for patients, healthcare, and business. Currently, there is a lack of knowledge of how these important choices are made in practice. This lack of knowledge is unfortunate, not the least given the recurrent observation that prioritisations in medical research do not always reflect the common good. A central point of departure for this project is that medical scientists balance different values when they design their studies. The design-phase is especially important as it sets the boundaries for what knowledge is possible to obtain. In this project we study the design phase in medical experiments with a focus on the scientific, medical, and economic values at play. We especially emphasize the role of
economic valuations. The research questions are: 1) How are different valuations done when designing medical experiments? 2) How are economic valuations related to, and delineated from, other valuations when designing medical experiments? The project is devised as a series of case studies to facilitate several important comparisons. Two types of medical experiments will be studied: large randomized controlled trials and experiments aiming to develop so called biomarkers for diagnostics and treatment.

The patient, the physician and their technologies – on change and continuity of patient-centered care
Doris Lydahl, Institutionen för arbetsvetenskap och sociologi, Göteborgs Universitet

Patienten, läkaren och deras teknologier – om förändring och kontinuitet i patientcentrerad vård


Att prata om ett patientcentrerat perspektiv inom vård är dock inget nytt – det gjordes populärt redan på 50- och 60-talet bland annat av psykoanalytikern Michael Balint som jobbade med allmänläkare i syfte att få dem att se ”hela patienten”.

Jag vill med denna presentation föra en diskussion kring vad det är som gör att patientcentrerad vård åter är i fokus genom att diskutera till vilka problem som patientcentrerad vård träder fram som en lösning idag och på Balints 60-tal, samt hur relationen mellan läkare och patient formas och omformas genom patientcentrerade perspektiv i de olika kontexterna. För att undersöka den patientcentrerade logikens verkningar använder jag mig av Foucaults teorier om styrningsrationalitet, och utgår från att olika typer av styrningsrationaliteter ofta växer fram i relation till problematiseringar – när någon finner något i sitt eget eller andras uppförande (conduct) problematiskt. Genom att utgå från Rose och Miller analyserar jag sedan problematisering i de olika kontexterna genom dess tre nyckeldimensioner av styran: rationalitet, program och teknologi. Jag vill i diskussionen också lyfta fram Mols teorier om omsorgens logik samt analysera och dels diskutera teknologins roll inom vård och dels föra ett resonemang kring att teknologi inte alltid bör förknippas med något ”kallt” och avhumaniserat samtidigt som vård inte alltid bör associeras med medmänsklighet och värme.

Presentationen kommer visa att de båda fallen, Balint 1960 och GPCC 2010-2011, strävar efter att ta hela patienten i beräkningen i sjuk- och hälsovårdsorganisationen, men att målen och metoderna för varför och hur man gör det har betydande skillnader. Balint framhäver läkarens personlighet som det främsta verktyget i att nå kvalitativ sjukvård, vilket innebär att den patientcentrerade logiken främst syftar till att forma och träna läkarens subjektivitet i hans professionella roll som allmänläkare. I den
moderna kontexten syftar det patientcentrerade perspektivet mer till att forma och guida både läkaren och patientens beteenden och subjektiviteter att bli mer självstyrande, självreglerande och ansvarsfulla i sitt beteende. Denna förändring anses nödvändig för att underlätta ett mer effektivt och ansvarsfullt hanterande av kroniska sjukdomar. Jag kommer vidare diskutera hur detta nya sätt att använda sig av den patientcentrerade logiken kan relateras till en mer generell förändring i hur samhället organiseras och styrs från en välfärdsrationalitet till en avancerad liberal rationalitet.

1C Markets
Room M37, 3rd floor

Local and international knowledge partners – patterns of change at the Swedish Institute for Surface Chemistry, 1980-2005
Karl Bruno and Katarina Larsen, Division of History of Science, Technology and Environment, KTH – The Royal Institute of Technology

Analyses of production of knowledge and collaboration between different domains or spheres of science and technology are of central importance to science and technology studies. They are also important to science policy makers, and perhaps more than ever today, when research and innovation systems are changing throughout the developed world. And while there already exists a significant body of academic literature claiming to describe (and sometimes prescribe) changes in knowledge production related to more general social and political change, fewer detailed empirical descriptions of how these changes manifest over time on the local level are available. The present study thus aimed to fill in something of this gap by providing a historical account of patterns of change and development within one particular case: the Swedish Institute for Surface Chemistry (YKI).

YKI, situated on the campus of the Royal Institute of Technology (KTH) in Stockholm, is one of the more scientifically oriented institutes in the Swedish institute sector. Its area of work is applied surface chemistry and colloid chemistry research, which implies potential for application in many areas and industry sectors, and the institute’s customers come from a wide range of fields – pharmaceutics, biotechnology, the food industry, pulp and paper, to name a few. This broad scope is also reflected in the institute’s scientific publications, and thereby the institute provides an interesting case suitable for a historical analysis of knowledge production using a combination of quantitative knowledge output indicators (publications, co-publishing with industry and with international partners, and citations of YKI-authored papers) and a qualitative study of the annual reports and other documents from YKI, for the time period 1980-2005.

Results from the study show that developments at YKI are partly in line with what could have been expected from the literature, but several interesting findings stand out. This presentation will focus on one part of these findings: the local and international dimensions of knowledge production, as illustrated by the fact that YKI has published extensively with its most prominent local partner (KTH) even as the institute has become more and more international in its outlook. From a policy perspective, this is of particular interest given the debate about the research institutes’ roles in serving the national industries and their history of having strong
links with local universities (co-location and affiliated university professors at institute). This study indicates the mutual importance of local and international collaborative ventures by the institute, but also that the importance and impact of international collaborations have varied over time, as well as the importance of interpersonal relationships for international collaboration. The study also illustrates how international ventures are motivated in national terms – as is very common in science.

The discussion of these results contributes to ongoing debates on local and national innovation systems, and to further empirical understanding of localised knowledge, as called for by scholars of innovation and knowledge transfer in the interface between organizations. Another contribution of the study is that it illustrates how quantitative and qualitative methods can complement each other to provide a fruitful approach towards an understanding of the dynamics of a historical case.

*Academic Entrepreneurship between Scientific Careers and Regional Innovation Policy: Case Studies from Italy*
Matteo Serafini, University of Bologna

During the last two decades – both at community and national level – the European policy makers placed more and more emphasis on the role of academic research in fuelling industrial innovation, economic development, and social welfare. In the attempt to imitate the successful US pattern these innovation policies are overbalanced on the sole aspect of technology transfer between university and industry – underestimating the more complex issue of academic research (Pavitt, 2001; Mowery, Sampat, 2005; Lissoni, 2011).

My paper aims at exploring which role technology transfer initiatives have in the broader academic and scientific careers of the university researchers. In so doing, I focus on a contemporary Italian case that exemplifies the attempts carried out in Europe for strengthening university-industry nexus. In fact, in the Italian region Emilia-Romagna the local government has tried to foster university-industry collaboration establishing institutional transfer channels – such as regional industrial research laboratories. On the other hand, however, looking at the professors rather than at the academic institutions technology transfer is more diffused and diversified than is generally thought. In this sense, the patent data (1960-2010) I collected concerning the present professors of the main university of Emilia-Romagna (i.e. University of Bologna, UniBo) show that these professors were involved as inventors – and often also as applicants – in 542 applications of which their institution is not the owner (against 163 submitted directly by UniBo).

Drawing on these results, I have selected three of the most productive UniBo’s academic inventors – active respectively in electric engineering, chemistry, and medicine. Special attention is given both to: a) which personal incentives drive them towards transfer activities; b) the relationship between their entrepreneurial strategies and the institutional context. On the basis of public sources on their scientific and transfer activities and of semi-structured interviews, my paper aims at assessing the development of three different entrepreneurial patterns: 1) the exploitation of his/her own expertise and research for launching a personal economic activity; 2) the use of
technology transfer activities mainly as means for supporting his/her research projects or group; 3) the attempt, carried out at institutional level, to build an institution involved both in academic research and technology transfer. Regarding these issues – central within the economic studies of innovation – STS can provide useful qualitative analyses drawing on the theoretical and empirical researches developed by several STS scholars on how scientists and engineers manage their activities and their careers (e.g. Morrell, 1972; Latour, 1987; Carlson, 1988).

Project PEER – Publication and the Evaluation of Excellence in Research
Ylva Hasselberg, Department of Economic History, Uppsala University and Sharon Rider Department of Philosophy, Uppsala University

Projektet PEER (Publication and the Evaluation of Excellence in Research) syftar till att anlägga ett historiskt perspektiv på marknader för vetenskaplig publicering. Utifrån den kompetens projektgruppen besitter (gällande olika marknader för vetenskaplig publicering, utvecklingen av publiceringsmönster och publiceringskulturer över tid, framväxten av formella verktyg för att mäta publikationers värde samt vetenskapsfilosofiska frågor) avser projektet att problematisera publicering genom att fokusera på skärningspunkten mellan vetenskaplig kvalitet och marknadsutveckling. Projektet är på planeringsstadiet.

Vad det tänkta projektet vill åstadkomma är att
1. undersöka relationen mellan publikationsmarknad, stat och vetenskaplig utveckling i ett längre tidsperspektiv, 1750- (Peter Josephson)
2. undersöka hur publiceringsstrategier interagerar med bedömning av vetenskaplig kvalitet inom discipliner med olika publiceringskulturer och hur detta utvecklas, 1900-1970 (Sharon Rider, Sven Widmalm, Johan Svedjedal)
3. undersöka hur den vetenskapliga bedömningen påverkas av aktörer på den oligopolliknande marknaden för vetenskaplig publicering och vilka strategier dess har, 1980-2010 (Ylva Hasselberg).

11:00 – 12:30 Parallel sessions (Brinellvägen 64)

2A Climate and Risk
Room M32, 1st floor

Elementary risk; understanding hydrogen risk with a posthumanities perspective
Martin Hultman, Umeå studies in science, technology and environment, Umeå University

There is a trend in the humanities to focus on materiality in forms of climate change, companion species and environmental issues. This comes together with interest in Deleuze & Guattari, Haraway, Serres, Barad as well as the popularity of research areas as Science and Technology Studies. How productive the so called ‘linguistic turn’ ever has been, it seems that environmental issues might be even more understandable with focus on semiotics and materiality (Åsberg, Hultman & Lee, 2012).
This paper deals with hydrogen as a risk element. As stated in the latest overviews regarding risk theories there is a need for avoiding the realist – relativist divide, more detailed studies and possibilities to understand the ordering of competing constructions of risk (Boyne 2003, Hutter 2006, Tulloch 2006:132, Horlick-Jones 2008, Zinn 2008). These needs are in this paper illustrated by the previous research on hydrogen risk. Risk regarding hydrogen is instead understood from a posthumanities perspective. It discusses the elements of risk by using a combination of actor-network theory and some concepts from discourse theory (Hultman, 2005). This article tries to deal with weaknesses in current risk theories as well as adding to the previous research on hydrogen risk.

*On the techno-logic of Climate Engineering*
Isabell Schrickel, Department of Philosophy and History of Literature, Science and Technology, Berlin University of Technology

As historian of science and media I am interested in the epistemological role of media- and image technologies in climate research, that means how in highly virtual scientific methods like computer simulations and global data-infrastructures a stable knowledge of climate change is produced. The terminology of climate research is thereby drawing permanently – since it's take-off after World War II, which is connected to the computerization of science – on the evidences of cybernetic modeling procedures; furthermore it's organization is completely inverting the nature of the atmospheric into an automated global knowledge infrastructure, that endures far beyond individual careers and that even seems to transcend the energy of social movements and political trends. The endurance of this «Vast Machine» itself legitimizes the knowledge it produces, and becomes self- perpetuating. This mode of knowledge production, the paradigmatic symbiosis of natural and technosciences, sets the mechanisms of discursivation of nature into motion: what has been once the «mute basic condition to our Dasein and being here» became an environment, a predictable, controllable, optimizable, technological ambiance.

Within this historical context I would like to address the technological options against climate change, that are currently discussed with increasing severity in the light of an ineffective international environmental politics: the possibilities of Climate Engineering. In contrast to the long history of weather modification, that aimed to control short-term local weather conditions, the ideas that have been developed since at least the 1980s focus on long-range solutions for the since then virulent issue of climate change on a global scale. The proposals of cooling the earth with a cloud of space mirrors, of preventing the climate from ice-ages and global warming by Edwards Tellers «insolation modulation» or of injecting more aerosols into the stratosphere might have been perceived as fantastic flights of fancy up to now. But we have to be cautious not to loose the descriptive character of the term «anthropocene» – it could become hence the mission statement of a particular alliance between politics and a certain mode of science. The National Academies of Sciences in the USA and the UK are concerned with the pros and cons of Climate Engineering already for several years now. But also the European technology assessment organizations have been commissioned with overview studies on the issue. The Kiel Earth Institute e.g. published in commission of the German Federal Ministry of Education and Research the scoping report *Large-Scale Intentional Interventions into*
The Climate System? Assessing the Climate Engineering Debate. Within the report they even assume the substitutionality between emissions mitigation and Climate Engineering (research). Even the Fifth IPCC Assessment Report will be concerned with the issue.

I would like to present this very current material and try to explain historically how in the recourse to techno-logical models in the conceptualization of environmental issues and in the convergence of ecological and economic concepts (e.g. in the term of «sustainability») the schemes of Climate Engineering appear as the ultima ratio to fight climate change.

Boundary spanning, deliberation and scientific integrity in early Earth System modelling
Ola Uhrqvist, Department for thematic Water and Environmental Studies/Centre for Climate Science and Policy Research, Linköping University

Scientific expertise plays a central and problematic role in present environmental policy-making. Governance of the climate system and other global change issues rely on Integrated Global Models, simulations and modelling practices without which anticipations of future trajectories are rendered impossible to calculate. Integrating disciplines and the challenged authority of experts as well as increased demands for accountability raised in both public and political spheres has altered the context for research and science communication. This paper studies how Earth System modellers conceptualised and related to the different roles of researchers, public and policymakers in order to produce more legitimate/performative knowledge on global change. The analysis departs from practices of boundary spanning, production of deliberative spaces and modellers concern about scientific integrity to understand the organisation of Earth System modelling in the Global Analysis and Interpretative Modelling Task Force (GAIM), an integrating project of the International Geosphere and Biosphere Programme (IGBP). GAIM is chosen for its central role integrating the different projects of IGBP aiming to predict the future state of ‘the Earth System’. Documents produced by GAIM from 1986 to 2004 and interviews with its participants are used as empirical material. This case of early expert democratization address how public/policymakers were understood and integrated in modelling practices, communication of uncertainty and experts reflections on scientific legitimacy. Knowing how modelling experts approached more integrative and deliberative forms of knowledge and expertise in understanding and developing performative knowledge about complex issues is important in the ambition to open scientific processes to public participation.

2B Organizations and Industry
Room M33, 1st floor

Sätta gränser: ”Grundforskning” och ”tillämpad forskning” i 1940-talets politik för branschforskningsinstitut
Ingemar Pettersson, Avdelningen för historiska studier av teknik, vetenskap och miljö, KTH – Kungliga tekniska högskolan, Stockholm

Sättet att organisera branschforskningen under 1940-talet väcker många frågor, inte minst därför att institut av den här typen vanligen betraktas som tillämpningsorienterade: Hur definierade utredningen ”tillämpad forskning” och ”grundforskning”? Hur förstods relationen kategorierna emellan? Varför ansågs uppdelningen nödvändig?

Jag kommer i min presentation att ställa upp några förklaringsansatser och argumentera för att uppdelningen var resultatet av ett slags politiskt gränsdragningsarbete (jmf. Thomas Gieryns ”boundary-work”) där kategorierna tjänade politiska och administrativa syften. Uppdelningen var på så sätt mer förankrad i politisk praktik än i föreställningar om kvalitativa skillnader mellan grundforskning och tillämpad forskning. Med denna utgångspunkt för jag vissa resonemang om ”den linjära modellen” och hur gränsdragningen i det här fallet kan relateras till särskilda politiska rutiner förknippade med ”den svenska modellen”.

Anders Johanssen – livsmedelskontrollant och forskningsentreprenör
Lena Molin, FOI och Ekonom-historiska institutionen, Stockholms universitet


AJ symboliserar i samma person kontrollören och tjänstemannen som ska administrera det nya moderna samhället och forskaren som ska utveckla dess redskap. Dokumenten visar hur kontrollören AJ arbetade in i minsta detalj och ger läsaren en känsla för hur det dagliga arbetet för en stadsveterinär gick till, vilka ärenden som prioriterades i hälsovårdsnämnden och hur de hanterades. På forskningsfronten är det intressant att se när AJ började forska och hur hans val av forskningsområde kan förstås emot livsmedelsshanteringens utveckling och tidens syn på vad som var viktiga delar att prioritera.
Kärnan i källmaterialet är protokollen för hälsovårdsnämnden i Lund där AJ var ständigt adjungerad och sällan missade ett sammanträde. Protokollen är utförliga med många bilagor bland dem vetenskapliga artiklar och rapporter skrivna av AJ.


_Bakom de globala kulisserna_

Alexandra Waluszewski, Centrum för Teknik- och Vetenskapstudier, Uppsala universitet

När det krisar i det globala företagslandskapet tycks handfallenheten stor. Det är åtminstone det intyck som ges av det nyhetsflöde som följt i kölvattnet av de senaste årens finans, skuldben, andra kriser. Hur skulle SAAB kunna få hjälp att åter bli det livskraftiga företag som Trollhättan, Sverige och en rad underleverantörer så desperat behövde – när de som styrde över dessa frågor fanns i USA och de som såg möjligheterna i Kina? Hur skulle de äldre på Stockholm Stads Koppargården få så torra blöjor de behövde – när det företag som upphandlat vårdkontrakten, Carema Care, i sin tur styrdes av ett brittiskt riskkapitalbolag med en helt annan affärsidé än att få gamla att må så bra som möjligt?

Vad de korta exempen ovan indikerar är bakom varje företag eller organisation som levererar en produkt eller tjänst finns en intrikat våv av andra av andra företag och organisationer, ihopkopplade i finansiellt, produktions, och/eller marknadsmässigt, över organisatoriska och nationella gränser. Därmed får en händelse, på en plats i världen, biverkningar för ett antal specifika, direkt och indirekt kopplade, företag och organisationer.

Även om de inledande exemplen visar något av globaliseringens mörka sidor så torde alla de företag och organisationer som frivilligt väljer att flytta ut större eller mindre delar av sin verksamhet till andra företag och organisationer också finna ett antal starka ekonomiska fördelar i detta. Att frivilligt släppa verksamheter utanför det egna företagets eller den egna myndighetens våggar skulle inte accepteras om det inte fanns betydande möjligheter till såväl ökad effektivitet som förnyelseförmåga. Effekterna av ett globaliserat landskap tycks med andra ord vara både ljusa och mörka – beroende ur vilket perspektiv de ses.

Avsikten med presentationen på STS-dagarna är att diskutera: a) vad som karakteriserar det globala affärslandskapets sätt att hantera innovationsförmåga och effektivitet, b) vad som karakteriserar makten över dessa förlopp, c) vilka krav detta ställer på ekonomiska analysverktyg c) vilka de ljusa och mörka effekter är – för företag såväl som för det omgivande samhället samt d) det samhälleliga behovet av att
gripa in det kopplade, globala företagslandskapet. Sist men inte minst är avsikten att diskutera hur det kommer sig att politiker och policyorganisationer tycks så handfallna inför de konsekvenser – både positiva och negativa – som följer av att företags, organisationers och myndigheters verksamheter alltmer flyttas ut till andra, inom eller utom landet – vilka har sina egna ekonomiska och sociala agendor.

2C Analyzing the Interface between Science and Technology:
Technological Hybrids, Science Networks and Sleeping Beauties
Room M37, 3rd floor

This session includes presentations from studies of evolution of technological solutions in areas of medical innovation in orthopedic implants (presentation 1), solar cell technology (presentation 2) and methods of citation analysis described using the case of Mendel’s work in plant genetics (presentation 3). The three presentations report from studies combining qualitative and quantitative methods. This includes empirical examination and analyses of cases aiming at tracing evolution of scientific advances, technological breakthroughs and science-based innovation. These studies of micro-level cases of the history of science can provide further empirically based understanding of case-specific conditions where existing paradigms are challenged. Sometimes these processes takes some time, as described in the case of Mendel, when there is a delayed response and recognition of new discoveries. Another contribution that this type of studies can make is to show how new domains of science and technology evolve over time influenced by new scientific breakthroughs, technological advances alongside societal demands and incentives, applied to diverse areas such as renewable energy and medical innovations.

Technological hybrids in medical innovations
David Barberá-Tomás, Ingenio, Universitat Politècnica de València

We present our historical findings about the technological evolution of a special kind of medical devices (orthopedic implants) using a rather new patent citation methodology, namely connectivity analysis of patent citations. We show how this methodology helps to delimitate the most important stages of the history of the technology at the product level of analysis. Furthermore, the study provides some examples of phenomena which can be better understood in the light of connectivity studies, as the hybridization of technologies or the dynamic relationship between regulation and technological innovation. The persistent uncertainty that looms over the search for solutions to health problems offers important conceptual insights for the study of technological change. This work explores the notion of hybridization, namely the embodiment of multiple competing operational principles within a single medical device, as strategy to deal with the practical shortcomings due to said uncertainty. The history of the development of the hybrid artificial disc affords the elaboration of an alternative view of hybridization and, at the same time, the articulation of a dualism between medical science as area of basic research (e.g. what disease is) and as practical knowledge (e.g. how disease can be tackled).
Science networks and innovation sequences in solar cell technology
Clara Calero-Medina CWTS – Center for Science and Technology Studies, Leiden University and Katarina Larsen, Division of History of Science, Technology and Environment, KTH – The Royal Institute of Technology, Stockholm

In solar cell technology, there are a number of parallel technical solutions. This study is focusing on a special type of solar cells that are imitating the photosynthesis in how it is designed to capture the light from the sun by using dyes (in a similar way as plants do using chlorophyll). This solar cell technology is therefore often called Dye-sensitized solar cells (DCS) and had some key breakthroughs in the late 1980s and early 1990s. The study is focusing on analyzing emergence and evolution of this science field over time by combining quantitative methods (citation network) and qualitative (interviews with researchers in the field and secondary data) to uncover mechanisms through which knowledge networks and science domains evolve over time in the quest for more efficient, cheaper and robust solutions in developing a novel type of solar cell technology. The results from the study and methodology development contributes with an interesting new empirical setting for using citation network analysis applied to solar cell technology that challenged prevailing regime of understanding ‘how you make’ solar cells. The complexity of the field of dye-sensitized solar cells itself can contribute to that new areas of inquiry can be shown, such as the example of the “organic dyes” discussed in the paper. Combining quantitative data with a storyline of key events aims to provide a richer story of the history of scientific discovery of nanostructured solar cell technology building on skills and knowledge that span disciplinary boundaries. This particular type of solar cells is in the crossroads of chemistry, physics and material sciences and can thereby also provide further insight into the dynamics of interdisciplinary technology.

Sleeping beauties, sell-by-date and “Mendel syndrome” in science
Rodrigo Costas and Thed van Leeuwen, CWTS – Center for Science and Technology Studies, Leiden University

The case of Gregor Mendel (1822-1884), whose discoveries in plant genetics (Mendel 1865) were so unprecedented that it took 34 years for the scientific community to catch up to them, has been a recurrent topic in the study of citation histories and ageing of scientific literature. In fact, the existence of a “Mendel syndrome” was suggested in 1979 by Eugene Garfield in relation with the “inability of citation counts to identify premature discoveries”. However, until recently, there has been a lack of systematic bibliometric methodologies able to analyze this problem from an empirical point of view. In this presentation, a new methodology for the general analysis of the ageing and “durability” of scientific papers is presented. This methodology classifies documents into three general types: delayed documents, which receive the main part of their citations later than normal documents; flashes in the pan, which receive citations immediately after their publication but are not cited in the long term; and normal documents, documents with a typical distribution of citations over time. Based on this methodology and classification, the existence of the “Mendel syndrome” is explored from an empirical perspective, providing new evidence on the real grounds of such a claim and the potential for further research of the developed methodology is discussed.
14:00 – 15:30 Parallel sessions (Brinellvägen 64)

3A In Medias Res: The Aesthetics of Scientific, Technological and Medical Things
Room M33, 1st floor

Introduction to Aesthetics in Science
Thomas Söderqvist, Medical Museion, University of Copenhagen

The aim of the science communication programme at Medical Museion, University of Copenhagen is to conduct research into public engagement with biomedical science, and to develop and pilot new research-based methods for public communication. This combined research and curatorial programme is based on the assumptions that medical science and technology is an integrated part of our culture, that public engagement with science is best promoted by dialogue and open access to the creative process (‘science in the making’), and that the material aesthetics of science, technology and medicine is an important and neglected dimension of science communication. In this session we will present three projects that explore the aesthetic/sensory (visual, tactile, audible, and olfactory) dimensions of scientific, technological and medical things and their settings. Each presentation outlines a specific theoretical approach to the aesthetics of things in medias res (in the midst of things) to help stimulate the critical sensory awareness of the workshop participants.

A sense of touch
Jan Eric Olsén, and Emma Peterson, Medical Museion, University of Copenhagen

Held to be the primary sense by Aristotle but nonetheless surrounded by many cultural taboos, as explicated by Freud, the sense of touch occupies a complex and contradictory role in society. This ingrained tension between the necessity of touch and the prohibition against touching has recently sparked off a renewed interest in the history and culture of tactile expression. While historians and scholars of comparative literature have looked at the different ways in which touch has been represented, anthropologists and museum curators have engaged with the concrete relation between touch and material objects of various kinds. In this presentation we will explore the realm of touch through a hands-on demonstration of a couple of medical-scientific objects.

Smelly medical things
Anette Stenslund, Medical Museion, University of Copenhagen

In this presentation I discuss ruminations on the ambiance marked by sensous medical things. First and foremost, the ambiance I seek to grasp is often given rise by our multisensous being; secondly, they touch upon us in an existential way; and last and not least, they smell! As smells are often passed by as a serious area of research my ambition is, as a methodological counterstrategy, to take smell-experiences as a starting point for the discussion. By help of a smell sensitive approach I will move along towards discussions of multisensous impressions of concrete medical things.
taken from the medical museum collection. My presentation will be exemplified with a nose-on demonstration of medical-scientific museum objects.

*The everyday aesthetics of laboratory things*

Thomas Söderqvist, Medical Museion, University of Copenhagen

Sci-art has become a recognised subgenre of the contemporary fine art scene – from beautiful images on scientific journal covers to tissue-engineered wet-art installations. Sci-art has entered art schools, has caught the interest of gallery owners and art reviewers, and has also drawn the attention of major funding agencies, like the Wellcome Trust, as a means for strengthening public engagement with science. However, the popularity of sci-art risks eclipsing another, and perhaps even more important, realm of aesthetic practice in science, viz., everyday aesthetics. My aim is to reclaim everyday (mundane) aesthetics and the sensory qualities of research as a central aspect of science and science communication. In this presentation I will show some visual and material examples of the everyday aesthetic qualities of things from a biomedical laboratory.

3B **Politics by what means? Scandinavian Approaches to STS and “the Political”**

Room M32, 1st floor

Throughout the history of science and technology studies (STS), "the political" has been of central scholarly concern. In this field, "the political" has taken on various analytical guises, spanning from the macro-oriented interest explanations of early sociology, in which political factors mainly played the analytical role of explanans, to increasing attention during later decades towards examining the role of science in the construction of sociopolitical worlds themselves. Thus, analysis of science as "politics by other means" has drawn attention to how scientific practices are continually coproduced with political realities. Further, politics has been of core concern in attempts to understand processes of scientific governance, and the relations and boundary struggles between stakeholders in the process of deciding what will count as legitimate knowledge. These negotiations increasingly take place in public forums, raising questions about the place of science and expertise in democratic societies, and the role of citizen engagement in these eminently political domains. In this line of research, STS scholars have often drawn on notions of democracy and deliberation. In addition, politics have been at the heart of debates concerning the role and engagement of STS scholars as they study issues of contestation and science-related controversy.

In this panel, we will explore how a closer interrogation of divergent political models and traditions might contribute to the project of exploring the contextual and locally situated forms of scientific labor, discourse and governance. We will specifically focus on the Scandinavian context, which has received considerable international attention throughout the twentieth century in the social and political sciences, due to the region’s traditions of strong welfare states, particular styles of social democracy, and distinctive consensus-based modes of political deliberation and decision-making. To what extent are these Scandinavian political trajectories implicated in (and reformulated through) the current landscape of scientific knowledge production and
science-based debates and deliberations across the Nordic region? How might a closer analysis of Scandinavian styles of democratic engagement help us to understand the national or regional organization and regulation of scientific practices? Do Scandinavian examples of intersections or entanglements between science and politics, broadly defined, offer insights that might inform STS approaches to "the political" in other contexts?

Making science public: revisiting the Swedish consensus model and the new politics of expertise
Alison Cool, Department of Anthropology, New York University, and Amelie Hoshor, Doctoral student, Department of Philosophy, Linguistics and Theory of Science, University of Gothenburg

Sweden, with its long history of consensus politics, offers an intriguing context for re-examining the stakes and boundaries of science-based controversies. What counts as legitimate deliberative participation in Sweden, when political discourses are organized around notions of compromise, and the appropriate path to resolving a problem often entails finding a “tolerable” solution rather than a zero-sum competition to impose a dominant perspective? While Danish models of "consensusing" valorize the layperson as the epitome of unbiased knowledge, Swedish styles of deliberation—and their emphasis on expert knowledge—raise different questions about how participating “publics” are defined, included, and legitimized.

Swedish political culture and decision-making processes are often described as open, deliberative, and inclusive of multiple forums for public participation. At the same time, scholars have highlighted Sweden’s highly rationalistic approach to social policy, in which experts and specialists play a prominent role in the processes of establishing political consensus. In this model, issues tend to be framed in particular, technical terms and thus made amenable to rational, scientifically grounded solutions. When a social problem is defined as a “scientific” issue (rather than political or ideological), the possibilities for legitimate participation that are available to actors are thus narrowly defined.

This, however, does not mean that traditional expertise and its boundaries remain unchallenged. We analyze two science-related controversies that played out in Swedish public media—the debate over the Metropolitan study (Metropolit) in the late 1980s and early 90s, and the so-called Gillberg affair over the DAMP diagnosis in the late 1990s and early 2000s—in relation to the emergence of alternative public forums within which interested actors ‘re-politicized’ scientific matters as social concerns. In both controversies, formal decision-making procedures were sidestepped, as stakeholders found other public platforms and media to raise questions about the appropriate boundaries of democratic participation in science-related matters. With reference to these debates, we argue for the significance of attending to the processes by which issues are made open to (as well as excluded from) public deliberation. We further suggest that the transgressive potential of deliberation, whether in relation to the boundaries between disciplines or those delineating areas of legitimate knowledge, is not necessarily an effect of a formal structuring of discussion, but can also emerge from more spontaneous public conversations and encounters.
Part and whole: regulating access to the human body
Klaus Hoeyer, Associate Professor, University of Copenhagen

To enhance a safe and stable supply of human organs, tissues, cells and blood EU health governance operates across a range of agencies. This paper will focus on the interaction of EU Directives and Danish transplantation practices. Technical expertise is dominant in the setting of safety standards. What receives much less attention, however, is the underlying logic determining what is seen as belonging under one directive rather than another. For example, organs have their own directive, but though bone marrow as a whole is typically considered an organ, bone marrow transplants belong under the Tissues and Cells Directive. Hearts belong under the organ directive, but valves and arteries under the tissue and cells directive. When in Denmark corneas are procured for transplants, a hospital orderly extracts the eye and sends it to the cornea bank. They keep the cornea, which is at this point considered tissue, but what shall they do with the rest of the eye? The Danish National Board of Health considers the eye an organ at the point of retrieval and therefore suggests sending it back to be cremated lying under the arm of the remains of the cadaver. Sometimes, however, the cadaver is already cremated at this point, in which case the eyes become redefined as ‘tissue’ (lacking the cornea and thus not a ‘whole eye’ anymore) and accordingly disposed of as hospital waste. By turning the attention to the implicit logics involved in the practices of categorization, I wish to turn our attention to the tensions and frictions that emerge from the grey zones of falling in-between. I thereby highlight how the identification of the ‘right expert’ presupposes a rarely articulated set of cultural logics carving out areas of expertise in reflection of notions of body and self (rather than the proclaimed aims of safety and stability). STS has often pointed to standards as new points of diversification, and this paper explores the specific localized reinterpretations of European standards in a Scandinavian context.

Can we still trust in the knowledge-based economy thesis? – Finland in front of new politico-ideological tensions
Marja Häyrinen-Alestalo, Department of Sociology, University of Helsinki

The Nordic countries have served as the models of generous welfare states being characterized by active and responsive government action. In Finland the welfare state was during its best days an ideologically sound political effort reflecting the aims of industrialization, technologisation and scientification of society and of a rapid expansion of public services. Even though the promotion of world market economic performance came to the political scene, the state was needed to correct, balance and create markets and to invest in education, health and other social services to fulfill the basic democratic rights of the citizens. State intervention was also needed since private capital was seen as dysfunctional and had to be kept away from the science and university systems. This government orientation is typical to the public-services-state which saw public services to promote productivity and the employment capacity of these services to be high.

In comparison to the other Nordic countries, the ideological turn from the state-led
actions to neo-liberal politics and the competition state was rapid and dramatic in Finland. In the early 1990s the politico-economic system became sensitive to new-growth type of theories that emphasized high tech-driven and market-oriented activities and transferred these ideas from technology and economic policies to science and university policies. In fact, the Finnish political scenarios were full of neo-liberal ideas of competition, survival of the fittest and of high-tech industries being capable to compensate dependency on the traditional factors of production, such as labour, raw materials and energy. Soon neo-liberal ideology found its political home from the knowledge-based economy thesis. It modified the concept of science-based knowledge into technology-based innovation seeing knowledge as a high-quality competence, not any longer as an outcome of scientific curiosity. Since then Finland, Sweden and Denmark have been found on the top of innovation performance rankings.

Recent processes of globalisation point to the need to revise the concept of world order due to the rapid economic growth of the developing countries. Still there is a strong trust in the global value of the knowledge-based economy. The ongoing severe economic depression in the old hegemonic countries, however, questions the validity of this thesis. Global comparisons also point to the need to broaden performance indicators to take account social factors, evidences of democracy and the new societal disasters such as climate change. Moreover, recent European experiences show the fragility of high-tech-driven economy and the coming of services among the key sectors of production.

When the provision of services is introduced in its new meaning to the political scene, the role of the state, the division of labour between the public and private sectors and the problem of non-marketable services become problematic issues. Finland has been a supermodel of a knowledge-based economy and it has a true history as a welfare state. Due to these developments also the tension between the economic and the social is more evident in the country than elsewhere in Scandinavia. How can a new services-state function in the middle of the competition state? Could a kind of Nordic capitalism have a future in this respect? What is the difference between the collective and individual responsibility?

*From industrial management to money management: Corporate Norway and the disruption of democratic capitalism*
Emil A. Røyrvik, SINTEF Technology and Society, Work Research, Norwegian University of Science and Technology

Through a focus on managerial rationality as a pacemaker of the modern social order, this paper discusses how transformations in corporate management reflect changes in the broader political economic context of “democratic capitalism”. Based on an ethnographic study of corporate managers in the 107 years old Norwegian based globalized aluminum company Hydro, the paper traces how a shift from what we simplistically can label “industrial management” to “money management” is related to a disruption, and possible dismantling, of the democratic model of capitalism often associated with Norway and Scandinavia.

Hydro was founded the same year Norway got its independence in 1905 and the
history of Norway and Hydro is intimately linked. Hydro has arguably been the most important industrial locomotive in the historical development of the Norwegian modern society and welfare state. And managers and employees in Hydro have historically perceived of their company as a vital social institution that has a much broader social and democratic mandate and justification than pure profit making.

In general terms Hydro instantiates an example of what is known as democratic capitalism, in complement to other key forms of capitalism, such as US “competitive capitalism,” British “personal capitalism,” and German “cooperative capitalism”, and we might add Chinese capitalism. In democratic capitalism a strong state combines with strong communalism and connects with the broadly based petit bourgeois and its ideals of equality and democracy (Sejersted 1993). A core question of this model has been how the economic domain can enable democratically participatory citizens and democratic societal development. In this view democracy is the overarching system value of capitalism (Slagstad 2001: 527), and this system has come increasingly under pressure during the last decades (Byrkjeflot et al. 2001). Interestingly, the roots of corporate management can be traced to the American discourse among engineers in the US in the years from 1880 to 1932 (Shenhav 1999), the latter year being the date when Berle and Means announced the “managerial revolution” (1991). Management has later differentiated itself from engineering, and key managing concepts were translated from the “technical” field to the operations of the whole organization and disseminated throughout society.

The paper explores some of the constraints, pressures and changes that have been happening with managerial rationality within Hydro, first in the Norwegian context of changing democratic capitalism, and then embedded in the global economy increasingly captured in super-financialized crisis.

3C Panel Teknik, Praktik, Identitet
Room M37, 3rd floor


Med avstamp i den forskning som bedrivs inom ramen för forskningsprogrammet Teknik, Praktik, Identitet (TPI) på Tema Teknik och social förändring vid Linköpings Universitet så fokuserar denna panel på hur teknik, praktik och identitet är sammankopplat. Övergripande har panelen sitt fokus på teknikens aktörer och de sociala sammanhang och miljöer som dessa agerar i. Vi i panelen intresserar oss för hur identiteter formas av tekniska artefakter och system och vice versa. Särskilt läggs tonvidt vid hur teknik och identitet skapas och iscensätts i olika praktiker. Det här inbegriper ett fokus på hur identitetsskapande processer kan förstås i relation till en mängd olika tekniska artefakter och teknologier såsom läkemedel, kemikalieövervakning, online-communities och teknisk bevisning vid rättegångar. Vi undersöker hur teknik skapas, används, hanteras och uppfattas i olika miljöer såsom domstolar, transportsystem, professionsutbildningar, myndigheter och inom vård- och
omsorg. Panelen kommer att visa exempel på STS-forskning där relationer mellan teknik och användare och mellan lekmän och experter undersöks i termen av social interaktion, meningsskapande och/eller iscensättning av identiteter och subjektiviteter. Syftet med panelen är att ge en överblick över hur vi som STS-forskare använder oss av gemensamma eller liknande teoretiska perspektiv kring relationen mellan teknik, praktik och identitet för att kunna begreppsliggöra och undersöka en mängd olika sociala sammanhang och praktiker där teknik och identiteter formas, förhandlas och iscensätts.

16:00 – 17:30 Parallel sessions (Brinellvägen 64)

3A (continued)

3B (continued)

3D Panel STS och engagemang i en svensk context
Room M37, 3rd floor

Johan M. Sanne, Department of Thematic Studies – Technology and Social Change (Tema T), Linköping University

Morten Sager, Department of Philosophy, Linguistics and Theory of Science, University of Gothenburg

Karin Fernler, Department of Management and Organization, Stockholm School of Economics

Lotta Björklund Larsen, Department of Thematic Studies – Technology and Social Change (Tema T), Linköping University

Tobias Fridholm, Faugert & Co/Technopolis, Stockholm

Sedan tidigare finns det en diskussion kring olika former för engagemang för STS-forskaren men denna diskussion förs oftast utifrån en amerikansk eller brittisk kontext. Vi vill med denna session bjuda in till en diskussion kring våra erfarenheter av engagemang i en svensk kontext. Vad betyder den svenska kontexten för våra möjligheter, våra strategier och effekten av vårt engagemang? Vilken betydelse har exempelvis konsensuskulturen och den sociala ingenjörskonsten för vårt engagemang?

Vi önskar en bredd på engagemanget så det bör handla om olika slags engagemang såsom aktivism, offentlig debatt, konsultarbete och lobbying. Hur kan vi gå vidare? Vad är möjligt att göra? Hur kan vi sammanföra våra erfarenheter?
Human Abilities, Giftedness, and the Soviet Sciences of Individual Differences
Katya Mishuris, Department of History, University of Michigan, Ann Arbor

Founded upon a utopian conception of human nature and a belief in the endless malleability of a human potential that could be fulfilled by social and cultural surroundings, the Soviet order strove from the moment of its inception to diminish individual differences and establish an absolutely egalitarian society. Given the ethos of egalitarianism and the nurture principle upon which Soviet society was based, what space existed for human difference under the Soviet order? How did Soviet psychologists and behavioral scientists conceive of the notions of human mental abilities and talent? How did they imagine the origins of special kinds of endowments, and how did Katya Mishuris account for their formation? How did Soviet scholars regard the interplay between “cultural” and “biological” determinants in their assessments of giftedness and talents, and on what tacit assumptions concerning human development, abilities, and needs were their assessments based?

My paper will seek to answer these questions by examining the construction of the language of human difference, giftedness, and talent in the writings of Soviet psychologists spanning roughly from the 1950s to the 1980s. Looking at the writings of such Soviet scientists as Teplov, Rubinstein, Krutetsky, and Nebylitsin, I will attempt to chart the transformation in the notion of human abilities during the time under consideration: from one predominantly based on socio-cultural determinants and tied up with the formation of personality and moral character to a more flexible and elastic conception of human variation, which allowed for the “biological” to coexist with socio-cultural interpretations of difference. Further, I will explore the role played by the notions of human difference, giftedness, and talent in the formation of Soviet differential psychology and psychophysiology as the distinct bodies of scientific knowledge.

Billington’s New Art of Structural Engineering and the Picture Theory of the Tractatus: Wittgenstein and Visual Thinking in Structural Art
Kelly Hamilton, Saint Mary's College, Notre Dame

An engineer’s ability to visualize a structure or invention and solve design problems by creatively altering configurations of its elements, calls for constructive, spatial, synthetic thinking. Arguing that there are three types of designers who work with form in space: the engineer, the architect, and the sculptor, David Billington investigates the evolution of structural art, an engineering form distinct from architecture or machine design. He presents the finest works of structural engineering created in the last two centuries, exploring how principles of form evolved in structural art. This engineering art form depends on artificial forms controlling natural forces. “The form controls the forces; and the more surely the designer can visualize
those forces, the surer he is of his form.” The role of spatial thinking, imagining the form or configuration of a structure in space, or seeing it in the mind’s eye, is crucial for the understanding the possibilities of the structure being designed. Visual thinking pervades the design process and is integral to the engineer’s ability to solve his basic problems.

A major focus of Billington’s investigation concerns how the structural artist thinks and works. On what kind of knowledge is engineering design based? How does a structural engineer think, communicate ideas, and design? Ludwig Wittgenstein’s picture theory of language in the Tractatus Logico-Philosophicus, his profoundly difficult and influential early philosophical masterpiece, can shed light on these concerns. Before he studied philosophy under Bertrand Russell at Cambridge, Ludwig Wittgenstein’s education was technical and scientific. His formal training and postgraduate research prior to approaching Russell to study logic were directed toward shaping the mind of a sophisticated research engineer. Wittgenstein earned his engineering certification at the MIT of imperial Germany, the Technische Hochschule at Charlottenburg in Berlin, when Germany was emerging as the industrial giant of Europe. What changes would have taken place in Wittgenstein’s mind as he learned to think like an engineer, and how might they have informed his early philosophy? The visual thinking involved in engineering design trains the mind’s eye to picture how the elements of a structure function in combination with one another. This visual thinking plays a critical role in the Bild theory of language in the Tractatus Logico-Philosophicus. It is not, perhaps, surprising that Wittgenstein was an engineer, a sculptor, and an architect. I will argue that his early philosophical doctrines can shed light on how structural engineers think and design.

Norms and translations in the smart home
Baki Cakici, Department of Computer and Systems Sciences (SU-DSV), Stockholm University / Swedish Institute of Computer Science (SICS)

Stockholm Royal Seaport is a future urban district in Stockholm which aims to meet ambitious sustainability goals. In this essay I examine the mechanisms of norm construction that appear in a pre-study that argues for the inclusion of an information and communication infrastructure within the planned district. In the report, brief project descriptions called demonstrators envision surveillance systems that can be deployed to meet the sustainability goals of the district. I focus primarily on the proposals that make use of the smart home idea, in which a wide variety of sensors capture data from the surroundings, and use the results to interpret or manipulate environmental conditions that are regulated by other technological systems. I use the concept of attachment to analyse the surveillant aspects of the proposed information systems. Specifically, I investigate how norms are established via surveillance, and how they aid the translation of the recorded instances between different contexts.

The properties of the inhabitants that are deemed visible in the smart home follow from a specific vision of sustainability that entails the wide-spread use of information technologies. The surveillance systems embedded into smart homes are designed to create new ways of describing and judging individuals according to this vision. The systems record and transfer the traces of the lives of the inhabitants from their original context into other information systems which are used to judge if the traces are
compatible with the encoded statistical norms of sustainable living (for example, avoiding excessive hot water consumption), and in cases of deviation from the established norms of that particular system, translate them into a different matrix of values where the subjects under surveillance can be convinced to behave differently: surveillance translates the transgressions, and the translations exert new pressures on existing power relations.

Within the smart home, the inhabitants who may potentially reject the usefulness or the applicability of the information-driven sustainability are not provided with the means to express their disagreement or to contribute to the ongoing knowledge making process aside from generating sensor data. The scenarios presented in the report exclude the possibility of not participating in this particular worldview while living in a smart home, which highlights the importance of problematising these technologies before they are in place.

**4B Roundtable Discussion Museums in the Anthropocene: Climate Change and Social History**
Room M36, 1st floor

Chair: Libby Robin, Division of History of Science, Technology and Environment, KTH – The Royal Institute of Technology / National Museum of Australia

Discussants:

Helmuth Trischler, Rachel Carson Center for Environmental History, LMU and Director of Research, Deutsches Museum, Munich

Anders Ekström, University of Uppsala / Division of History of Science, Technology and Environment, KTH – The Royal Institute of Technology, Stockholm

Anders Houltz, Division of History of Science, Technology and Environment, KTH – The Royal Institute of Technology, Stockholm

Museums are an important public space in which Big Ideas can be debated. Through objects, exhibitions and events, a number of the world’s museums are embracing the concerns of science, technology and environmental studies. In this round table, we are seeking to draw on the ideas of the science and technology studies community about presenting climate change, global change and the concept of the Anthropocene to museum audiences. Important global questions like these generate few unique ‘objects’ and are generally couched in cross-disciplinary intellectual traditions, posing particular challenges to museum curators working to showcase these ideas in different local contexts.

This round table plenary session will begin with short provocations from the discussants, and we will follow with an open question session, exploring the task of museums when they present ideas from science, technology and environmental studies to broad audiences. In particular, we consider the social history of ideas about changing climates in our present era of the Anthropocene, and the role of the environmental humanities in facilitating conversations across disciplinary divides.
In this session we will present the book, Cosmopolitan Commons in Europe, that is forthcoming on MIT Press with Nil Disco and Eda Kranakis as editors and in which the three of us have contributed a chapter each. The phenomenon of commons and the question whether commons are prone to tragedy has been much discussed in recent decades spurred first by Garret Hardin’s classic article “The Tragedy of the Commons” (1968) and thereafter by Elinor Ostrom’s book Governing the Commons (1992). While Hardin and Ostrom took small scale and pristine, almost archaic, commons as their objects of study, our interest is in larger scale commons that are intimately linked with technology and that have been facing similar kinds of dilemmas and threats. The term “cosmopolitan commons” that we use draws not only on the above mentioned approach but also on the theory of cosmopolitanism developed by David Held and others in the 1990s for analyzing the dynamics of increasingly interdependent “communities of fate”. Our book contains a number of examples of cosmopolitan commons analyzing how actors in different countries have been able to develop institutional regimes for managing and maintaining them. At the session three of these examples will be presented.

No man’s land and no man’s technology? The North Sea as transnational common. Håkon W. Andersen, Department of History and Classical Studies, University of Trondheim

How are technologies regulated and trusted in transnational commons? And how do commons change when technologies change? This paper will focus on the North Sea as a transnational common, that is a place that nobody owns, no single state controls and everyone has access to. In this space, technology makes all the difference: shipping on the surface, fishing in the sea and rich oil and natural gas resources under the seabed. Changes in technology change the importance of the common, both economically and strategically. To get rich in transport, fishing and oil and gas has been an old goal with restricted possibilities. These restrictions have always changed with changing technology. At the same time new technologies have also opened large new vistas and profitable possibilities, often at a high risk. The point of this paper is to explore the much studied field of commons and combine this with two extra dimensions: trans nationality (commons outside the control of single national states) and with the dynamics of changing technologies, be it in shipping (surface), fishing (in the sea) and oil and gas (under the seabed). The main focus will be on the post 1850 period.

Under a Common Acid Sky: Negotiating Transboundary Air Pollution in Sweden
Arne Kaijser, Division of History of Science, Technology and Environment, KTH – The Royal Institute of Technology, Stockholm

This paper deals with the discovery of “acid rain” by Scandinavian in the late 1960s. They argued that the acid rain was caused by large scale emissions of sulfur dioxides
on the European continent and British Isles. It soon turned out that there was a dilemma of asymmetry involved. Some of the countries that were large net exporters of sulfur emission had ecosystems that were not very sensitive to acid rain, while some of the net importers were very sensitive. Therefore the net exporters were not very interested in imposing expensive cleaning technologies on their industries. None the less the importing countries were able to initiated international research projects and these led to a common understanding of the causes and effects of this air pollution among researchers. This in turn contributed to political negotiations that eventually led to the adoption of the Convention of Long Range Transboundary Air Pollution in 1979, which implied the establishment of an international regime for handling long range air pollution that has contributed to a substantial reduction not only of sulphur emissions but also of a number of other pollutants.


Negotiating the Radio Spectrum: Striving to maintain a tenable space for European broadcasting
Nina Wormbs, Division of History of Science, Technology and Environment, KTH – The Royal Institute of Technology, Stockholm

This paper deals with the radio spectrum as a natural resource, the use of which is determined on radio technology, above all transmission and reception equipment. Early in the history of radio, the technology of using a carrier wave on a certain frequency was established to allow for several users of the spectrum at the same time and to avoid intermingling and mixing of different signals. This technological solution, however, in turn made the resource precarious and subtractable due to the fact that the number of frequencies at hand was technology determined and in practice finite. I argue that they way in which the use of this resource was regulated and institutionalized is an example of a moral economy resulting in what we here call a cosmopolitan commons. The empirical case to support this claim is the institutionalization of frequency plans for European broadcasting from the 1920s to the 1950s.