



STAGES

Structural Transformation to Achieve Gender Equality in Science

Action 3.1.1.

Documenting developments in gender equality at Aarhus University
June 2012

Mathias Wullum Nielsen,
Evanthia Kalpazidou Schmidt & Ebbe Krogh Graversen



THE DANISH CENTRE FOR STUDIES IN RESEARCH AND RESEARCH POLICY
BUSINESS AND SOCIAL SCIENCES
AARHUS UNIVERSITY

Introduction

The Structural Transformation to Achieve Gender Equality in Science (STAGES) project has its point of departure in two European projects on gender equality. The first project, Practising Gender Equality in Science (PRAGES)¹, in which Aarhus University was involved, pursued the objective of collecting, analysing and benchmarking programmes and initiatives oriented at gender equality in research institutions, singling out the most successful actions and providing recommendations through a set of guidelines regarding their possible adaptation and transfer to other contexts. The second project Women's Careers Hitting the target: Gender Management in Scientific and Technological Research (WHIST)² tested coordinated concrete actions by putting collected knowledge at work. WHIST applied the PRAGES guidelines as a tool for designing and steering relevant initiatives in research institutions, such as Aarhus University, the European Space Agency and the Fraunhofer Institute.

During the course of the European 7th Framework Programme for Research (FP7), and in the light of the results of the various actions implemented, the need gradually emerged of launching integrated projects with a wider scope, able to acknowledge and address the multidimensional nature of the gender and science issue avoiding simplistic mono-dimensional approaches. In particular, the shift was irreversibly made away from the "fixing the women" approach towards the more structural "fixing the organisation". Programmes aimed at encouraging actions geared at deeply changing science- and technology-related research environments and cultures were therefore increasingly implemented. This strategy of pursuing structural change in universities and research organisations was formally defined and launched in 2010 and is now being further developed (STAGES, 2011:7).

STAGES has been designed with the wide-ranging aim to launch structural change strategies addressing the many interconnected layers of the problem of gender inequality in science. The project expands over 4 years, and adopts an integrated perspective, involving human resources management in European research institutions. To achieve its general aim and specific objectives, the project comprises the following elements: 1) Designing of self-tailored action plans to implement in the participating research institutions, using a common theoretical and methodological framework; 2)

¹ <http://www.retepariopportunita.it/defaultdesktop.aspx?page=2749>

² <http://www.retepariopportunita.it/defaultdesktop.aspx?page=3414>

Implementation of the above-mentioned action plans, according to the roadmaps of each research organization participating in the project; 3) Coordination and promotion of mutual learning processes among the partners; 4) Ongoing and final evaluation of the initiatives, which will apply indicators and technical instruments developed on the basis of data and information resulting from monitoring of activities; 5) The production of guidelines directly deriving from the structural change experience, focusing on successful consensus-building strategies to assure long-run sustainability for the actions implemented; and 6) Networking and dissemination activities (STAGES, 2011:3-4).

Activities at Aarhus University

In 2008, Aarhus University appointed a taskforce for gender equality comprising HR-partners, researchers and the director of administration. The overall objective of this taskforce was to draw up a strategy on gender equality³ aimed at enhancing career opportunities for female researchers and managers in the organisation. The same year, the university management signed a charter – *The charter for more women in management* – initiated by the minister of Gender Equality, and hereby made hence a commitment to determine a series of targets and draw up a set of action plans addressing gender equality.

Following these developments, a range of new initiatives geared at enhancing gender equality at Aarhus University has been carried out in the framework of the human resources department and the mandate of the taskforce on gender equality, under the experimental initiatives scheduled in the WHIST project. However, a more systemic action plan is needed, encompassing all the faculties, in order to achieve more comprehensive results and long-term effects, namely a structural change, which is addressed through the STAGES project.

Organisational transformations

At the moment, Aarhus University is in the process of restructuring its entire organisation, which could prove to be an excellent opportunity to implement gender-related structural changes. In a time of profound transformations the issue of gender equality could become one of the key elements of structural change. In the STAGES framework, the action plan of Aarhus University includes a set of integrated activities, targeting all the faculties/main

³ All talent in play, 2008 (Alle talenter i spil, 2008)

areas, geared at extending and making permanent the encouraging results of previous years (STAGES, 2011:21).

Before outlining the topical results on gender equality, it is important to draw attention to implications of the above mentioned structural alterations. In 2010, Aarhus University changed its organisational structure from nine faculties (cf. figure 1, Annex) to four closely connected main areas: Arts, Science and Technology, Health, and Business & Social Sciences (cf. figure 2, Annex). As a consequence of this reorganisation, the number of departments was reduced from fifty-five to twenty-six units (WHIST, 2011:4-7).

Obviously, this structural transformation, have had some consequences for the data composition of the continuous mappings of gender equality in the organisation. The numbers and figures presented in this document will therefore be divided into: a) Developments at faculty level (from 2008-2011); and b) Recent figures distributed on the basis of the four new main scientific areas (primo 2012)⁴.

Documenting developments

Promoters of gender-oriented programmes often face the problem of a scarcity or even a lack of knowledge and data on the factors that contribute to create an unfriendly environment for women in research organisations. This exposes them to the risk of acting on the basis of abstract and unreliable assumptions and consequently promoting ineffective actions which do not match expectations and needs nor improve the working environment. Documenting developments in gender equality is essential to counteract the widespread tendency of staff and managers (often among women as well) to deny the existence of the problem in their organisation or to underestimate its dimensions and impacts. Documentation of developments might thus create a basis for commitment and support on behalf of management and colleagues (PRAGES, 2009:53-54).

The first STAGES action at Aarhus University is therefore aimed at stock-taking of the current situation and collecting data on developments within gender equality in order to proceed with further activities. The presentation below comprises results concerning the following topics: gender distribution in management, gender distribution among research staff (total, faculty level and career level), and developments in the share of appointment committees representing both women and men. The objective of the first section will be to

⁴ This division only concerns figure 5-14.

give an overview of the total gender distribution within research and management, while the second section aims to outline developments on gender balance at faculty/main area and career level.

The Big Picture

The problem of gender equality is a pertinent challenge at Aarhus University as reflected in the tables and charts below. While women are slightly overrepresented in mid-level management and specialist positions (level 3, figure 1) and comprise more than half of the university board⁵, the top level management positions are almost completely occupied by men. Less than one-fifth of level 2 managers (all together 17 %) are women, and top leadership positions (rector, pro-rector and director of administration), are all-male dominated.

Figure 1: Gender distribution in university management distributed on full time positions.

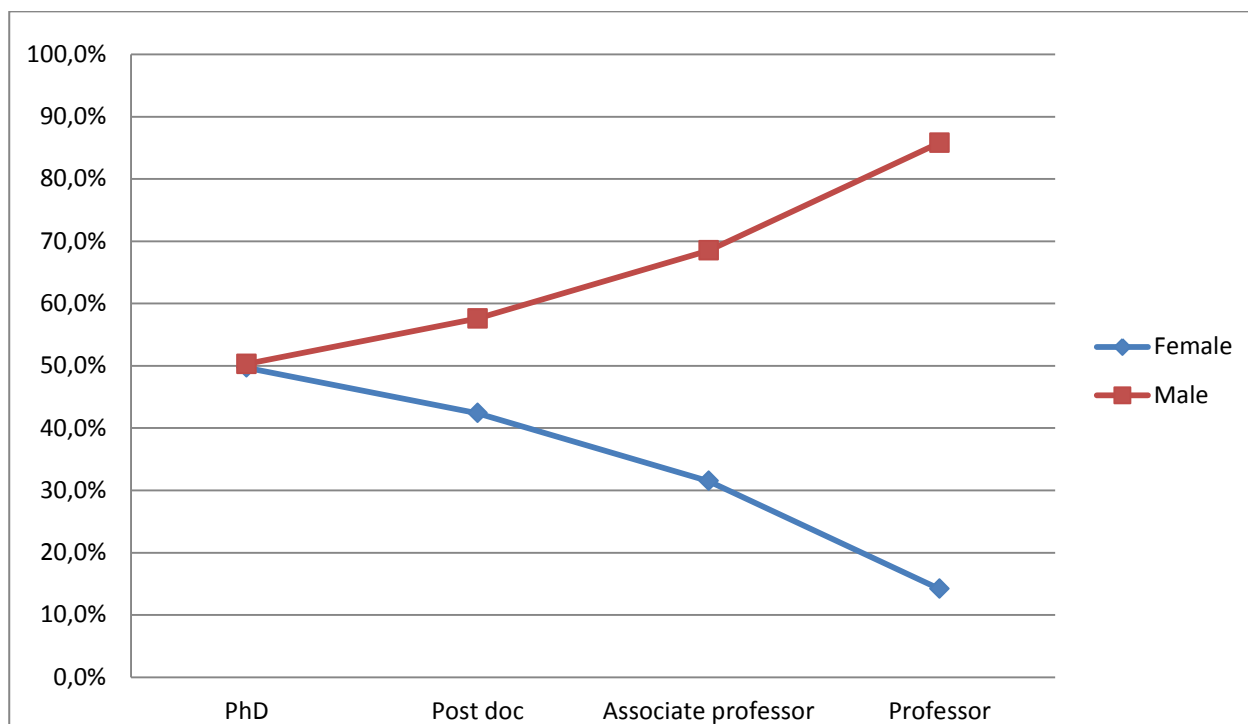
Gender distribution in university management	<i>Female</i>	<i>Male</i>
Level 1: Rector, Pro-rector & Director of Administration	0,0	3,0
Level 2: Management E.g. deputy director, dean, pro-dean, head of department, head of centre, head of administration, head of secretariat, functional manager)	49,7	289,8
Level 3: Leaders and specialists	104,8	84,4

Data source: *Report on gender equality* for the ministry of gender equality, 2011 – (Ligestillingsredegørelsen, 2011).

A brief look at the latest numbers regarding researchers reveals a similar situation. As illustrated in the scissor diagram below, there is a significant leak in the numbers of female researchers at each step of the academic ladder, from PhD- to full professor level. While nearly half of the PhD-students in 2012 were women, female researchers only occupied 14,2% of full professorships.

⁵ <http://www.au.dk/en/about/uni/theaarhusuniversityboard/>

Figure 2: Gender distribution at Aarhus University 2012



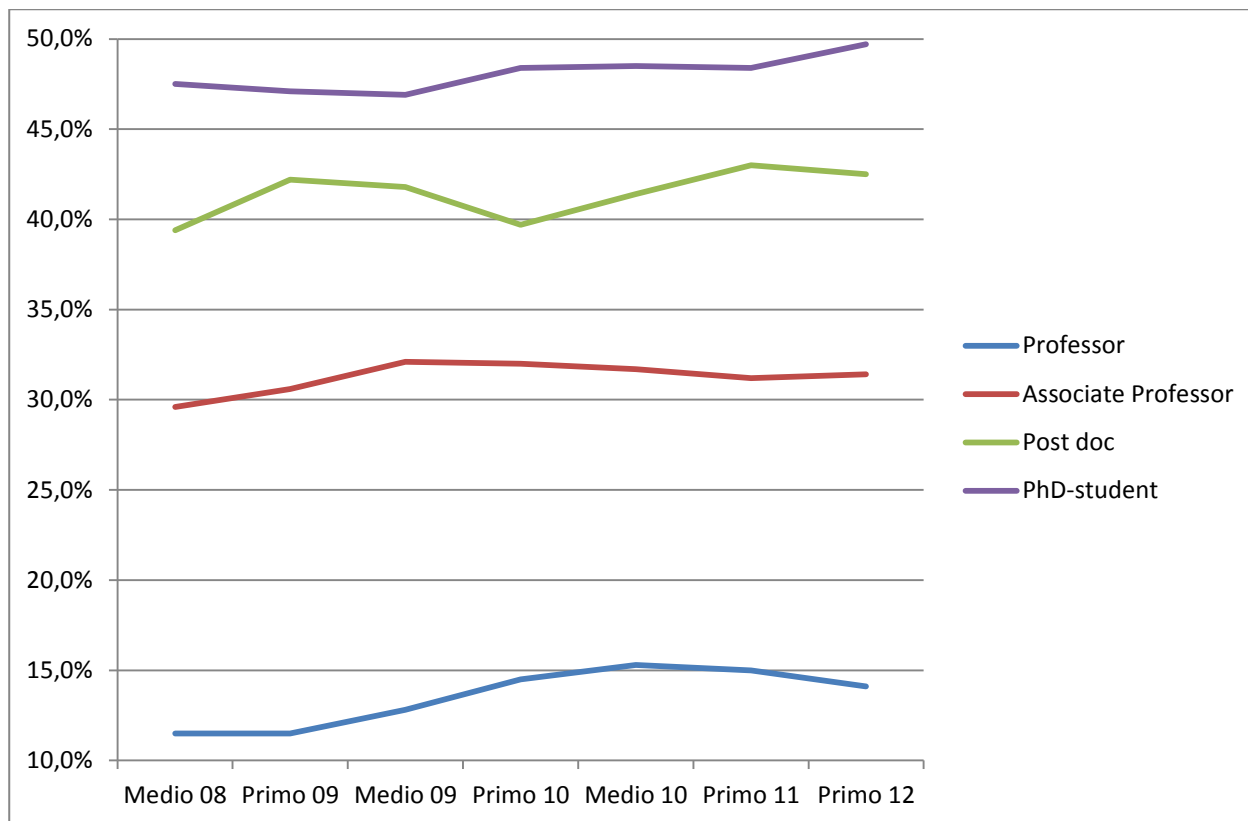
	2012	
	Female	Male
PhD-student	49,7%	50,3%
Post doc	42,4%	57,6%
Associate Professor	31,5%	68,5%
Professor	14,2%	85,8%

Data source: Human resources (Aarhus University).

However, things are slowly changing for the better. Figure 3 gives an overview of the developments in female shares of research staff at Aarhus University from 2008 to 2012. During this period the number of female full professors rose by 2,7%, peaking in 2010 with a total share of 15,3%, while the share of female associate professors, post docs and PhD-students increased 1,9%, 3,6% and 2,2%, respectively. A pivotal share of this increase is most likely to be caused by the WHIST-project actions (WHIST, 2011)⁶ and the activities of the taskforce placing gender equality issues in the forefront of the University agenda as never before.

⁶WHIST (Women’s careers hitting the target) is an international project funded by the European Commission with the general purpose of strengthening the capacity of S&T research institutions to manage and promote gender diversity in scientific organisations.

Figure 3: Female share of research staff at Aarhus University – Development, 2008-2012



	Medio 08	Primo 09	Medio 09	Primo 10	Medio 10	Primo 11	Primo 12
Professor	11,5%	11,5%	12,8%	14,5%	15,3%	15,0%	14,2%
Associate Professor	29,6%	30,6%	32,1%	32,0%	31,7%	31,2%	31,5%
Post doc	39,4%	42,2%	41,8%	39,7%	41,4%	43,0%	42,4%
PhD-student	47,5%	47,1%	46,9%	48,4%	48,5%	48,4%	49,7%

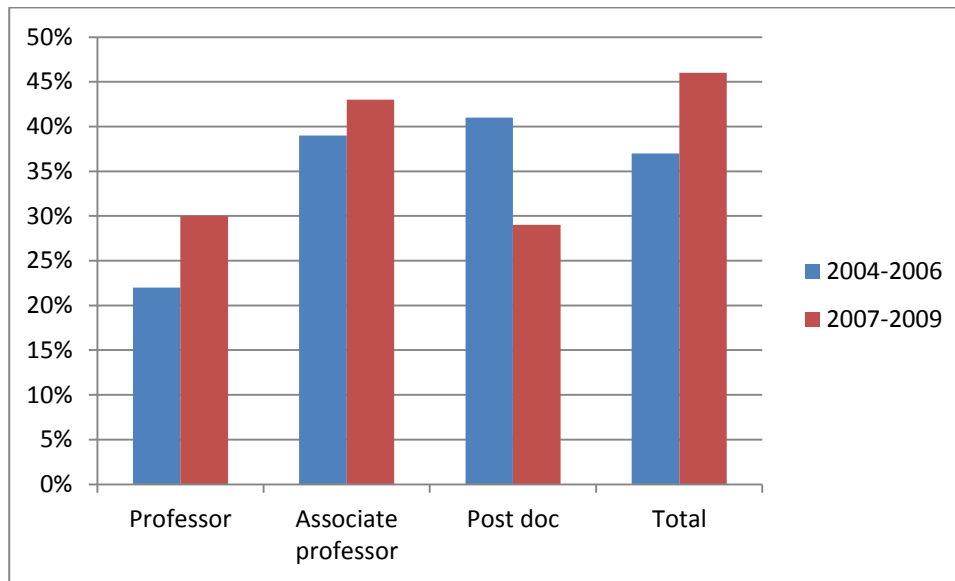
Data source: Human resources (Aarhus University).

Before proceeding to recent changes in gender distribution at faculty/main area level, it is pertinent to investigate general developments in the female representation in university appointment committees⁷. The most recent data regarding this topic run from 2004-2009

⁷According to Aarhus University’s former gender equality strategy (Ligestillingshandlingsplan, 2005) a data collection regarding on-going developments in the number of female and male applicants, qualified applicants and newly employed research staff, was launched in 2005. However, it has not been possible to trace the location of these data in advance of this publication.

(cf. figure 4), and reveal a significant increase in the share of academic top position appointment committees representing both men and women⁸. However it is important to notice, that a considerable part of this development must be due to the comprehensive university mergers in Denmark during 2006,2007 and 2008. In this period Aarhus University almost doubled its size, merging with a number of smaller institutions of higher education and research (Staahe, 2011:110-111).

Figure 4: Share of appointment committees at Aarhus University in 2004-2006 and 2007-2009 representing both women and men.



	2004-2006	2007-2009
Professor	22%	30%
Associate professor	39%	43%
Post doc	41%	29%
Total	37%	46%

Source: (Staahe, 2011:110)

⁸ With the exception of post doc committees decreasing from 41% to 29%.

Developments at faculty/main area level

Total share of female researchers

As elaborated in WHIST (2011) the outcome of recent years' comprehensive initiatives on gender equality at Aarhus University, has been very positive and encouraging. The chart below (figure 5) illustrates developments in the total share of female researchers at faculty level between 2009 and 2011. All together these developments sum up to 1,9% with a particularly significant increase in the disciplines of environmental studies (3,0%) and health sciences (5,4%).

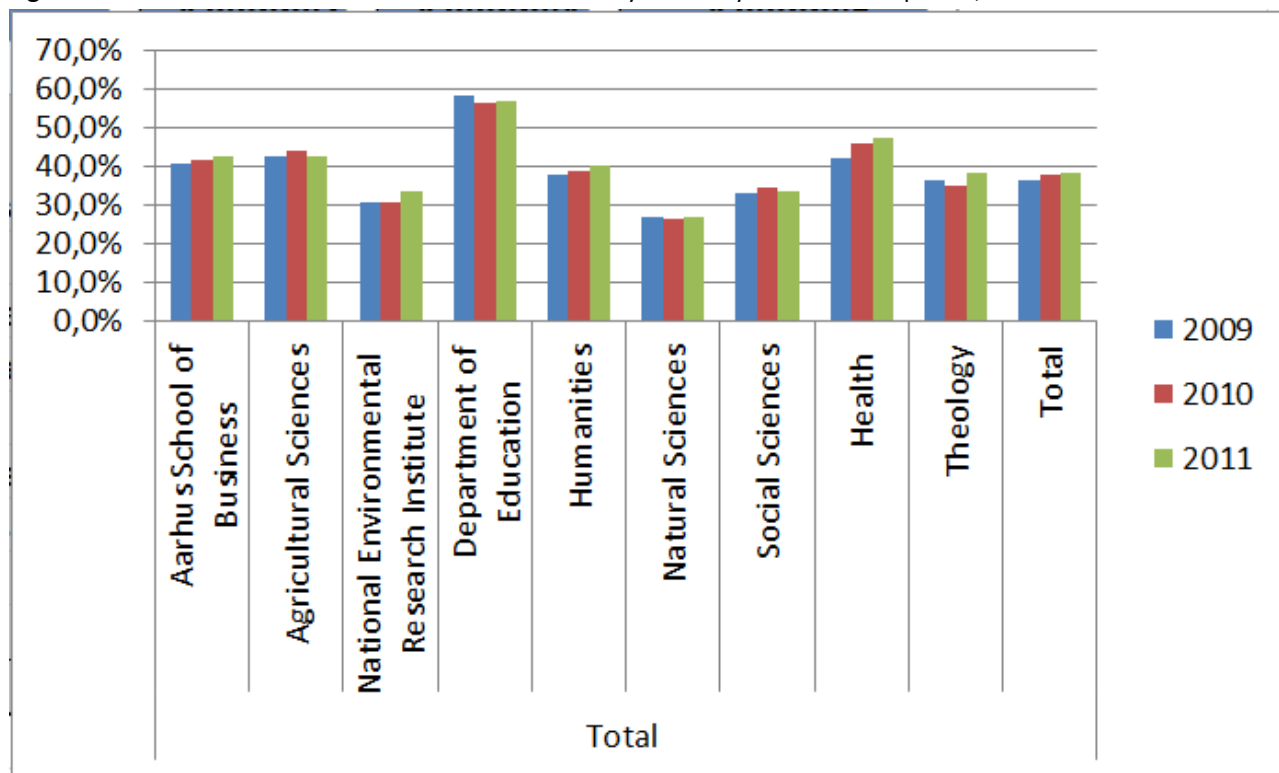
Figure 6 offers an overview of the most recent numbers on gender equality (2012) distributed on the basis of the new main areas. These numbers reveal a modest increase in the total share of female researchers from 38,4% to 38,9%. The widely reported shortage of female applicants to the educational programmes of natural sciences across Europe⁹ reflects in the share of female scientists at Science and Technology (30,3%), while the areas of Health and Arts, recruiting a majority of female students, also score high on relative shares of women in research¹⁰ (47,9% and 46,5%, respectively). Health is the only scientific field unaffected by the above mentioned organizational changes, which makes it relevant to link recent results regarding this area with preceding developments at faculty level. Such a comparison reveals a minor leak (1%) in the share of female researchers during the recent year¹¹.

⁹See e.g. the ROSE project: <http://roseproject.no/index.html>.

¹⁰ The share of female students completing a master's degree programme at Aarhus University in 2010 comprised 68% at Arts, 68% at Health and 20% at Science and Technology (National Statistics, Denmark).

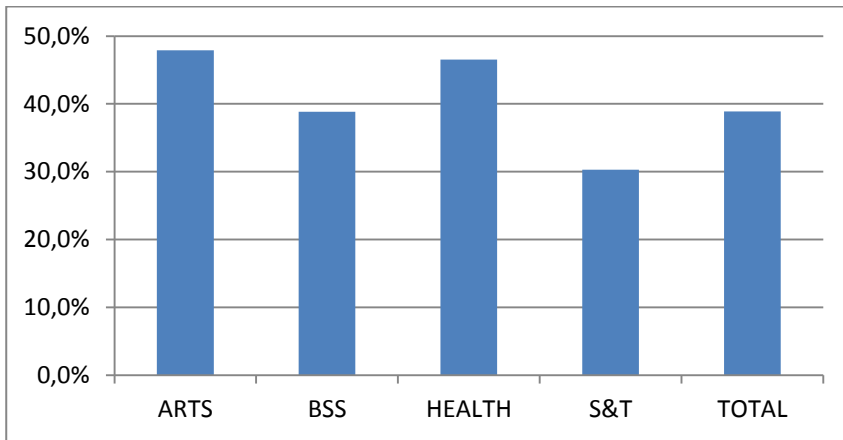
¹¹The remaining main areas are difficult to link with the preceding developments, due to the comprehensive structural changes causing mergers at faculty level: Aarhus School of Business and the Faculty of Social Sciences have been merged to form *Business and Social Sciences* (BSS); the Faculty of Natural Sciences merged with Agricultural Sciences and the National Environmental Research Institute to form *Science and Technology* (S&T); while the Humanities, Theology and the Department of Education have been merged to form *ARTS*.

Figure 5: Share of female researchers at Aarhus University at faculty level – Development, 2009-2011.



		2009	2010	2011
Total	Aarhus School of Business	40,7%	41,7%	42,8%
	Agricultural Sciences	42,6%	44,2%	42,8%
	National Environmental Research Institute	30,7%	30,6%	33,7%
	Department of Education	58,5%	56,4%	57,0%
	Humanities	37,9%	38,8%	40,4%
	Natural Sciences	26,8%	26,5%	27,2%
	Social Sciences	33,1%	34,6%	33,8%
	Health	42,1%	46,0%	47,5%
	Theology	36,5%	35,2%	38,5%
	<i>Total</i>	36,5%	37,7%	38,4%

Figure 6: Share of female researchers at Aarhus University distributed on the basis of the new main scientific areas, 2012.

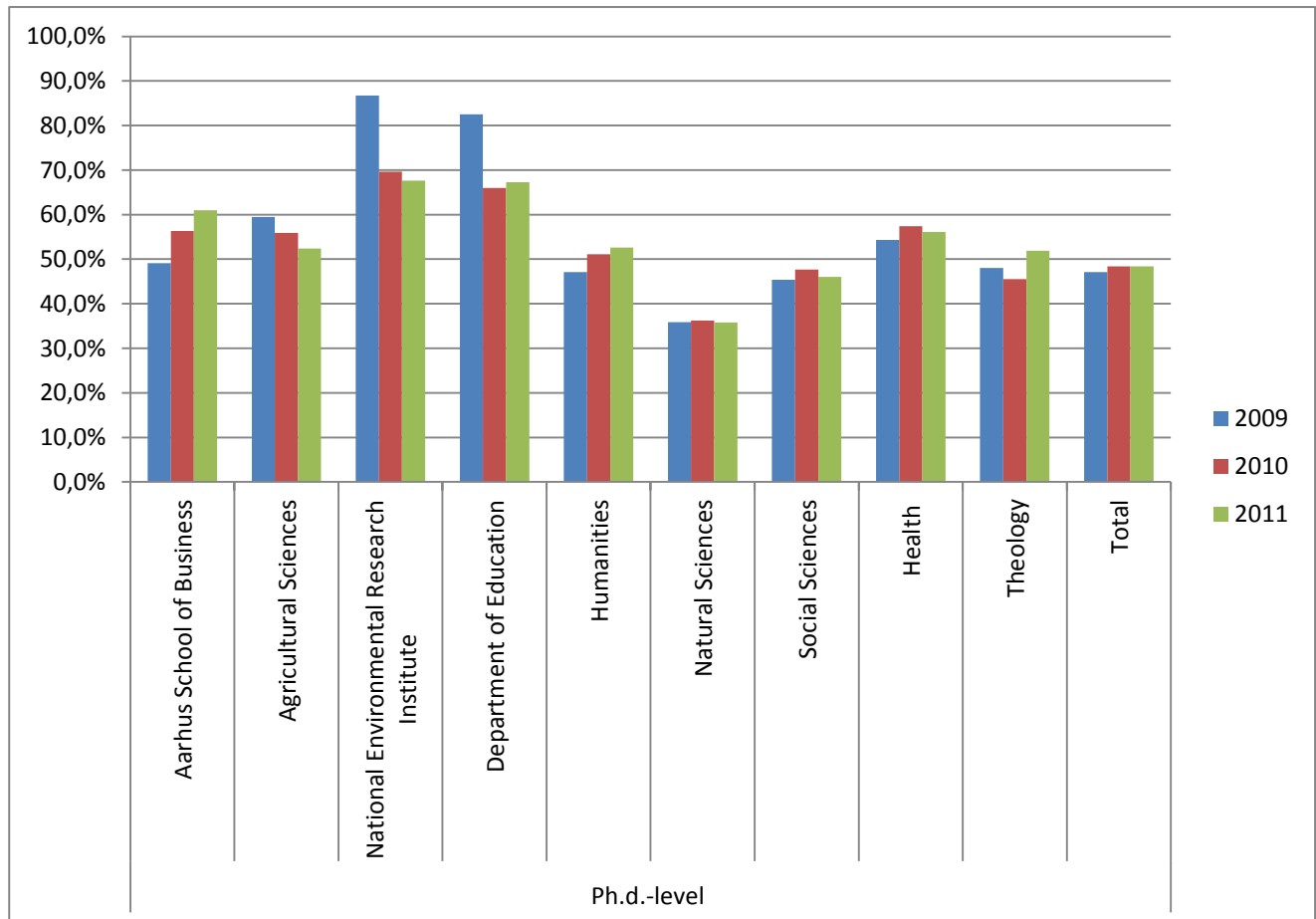


		2012
Total	ARTS	47,9%
	BSS	38,8%
	HEALTH	46.5%
	S&T	30,3%
	TOTAL	38,9%

Female share of PhD's

Female researchers occupy nearly half of all PhD-positions at Aarhus University, and a brief look at the developments at faculty level from 2009 to 2011 shows an excessive rise in women's representation at Aarhus School of Business (11,9%) and more modest increases in areas such as Humanities (5,5%) and Theology (3,9%). On the contrary, the Department of Education and the National Environmental Research Institute experienced notable decreases (15,2% and 19,2%, respectively)¹². However, women still comprised more than 2/3rds of the PhD positions in these areas in 2011. The latest results from 2012 reveal an overrepresentation of female researchers in the fields of Health, Arts and BSS by 57,5%, 60,1% and 52,9%, respectively, while women are still under-represented in S&T (38,9%).

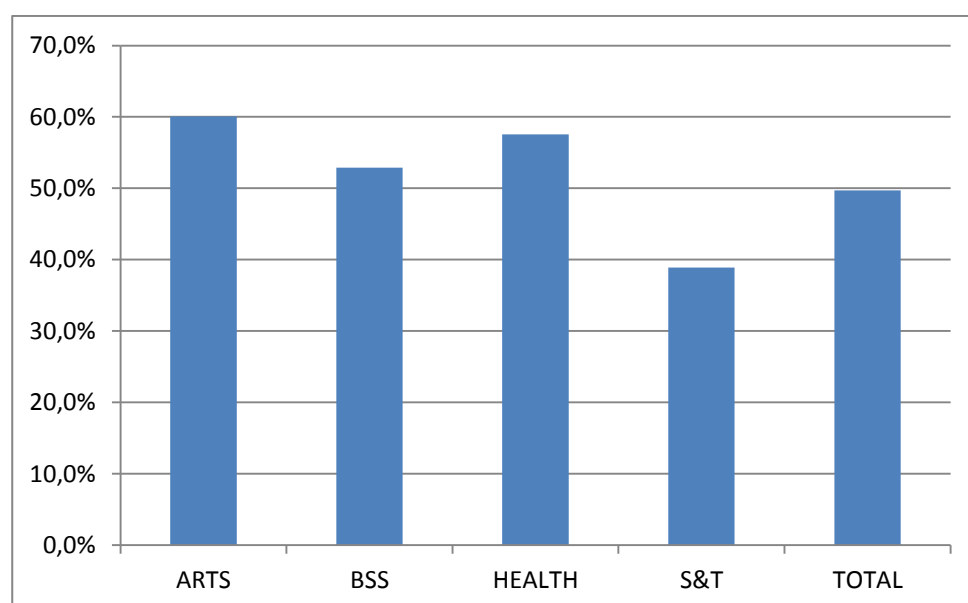
Figure 7: Female share of PhDs at Aarhus University – Development, 2009-2011.



¹² These changes are due to significant increases in the share of male PhD-students at both faculties during 2009 and 2010. In this period the number of PhD-students at The National Environmental developed from 14 women and 4 men to 16 women and 7 men, while the number of PhD-students at the Department of Education developed from 33 women and 11 men to 33 women and 17 men.

		2009	2010	2011
PhD-level	Aarhus School of Business	49,1%	56,3%	61,0%
	Agricultural Sciences	59,5%	55,9%	52,4%
	National Environmental Research Institute	86,7%	69,6%	67,6%
	Department of Education	82,5%	66,0%	67,3%
	Humanities	47,1%	51,1%	52,6%
	Natural Sciences	35,9%	36,2%	35,8%
	Social Sciences	45,4%	47,7%	46,0%
	Health	54,3%	57,4%	56,1%
	Theology	48,0%	45,5%	51,9%
	Total	47,1	48,4	48,4

Figure 8: Female share of PhDs at Aarhus University distributed on the basis of the main scientific areas, 2012.

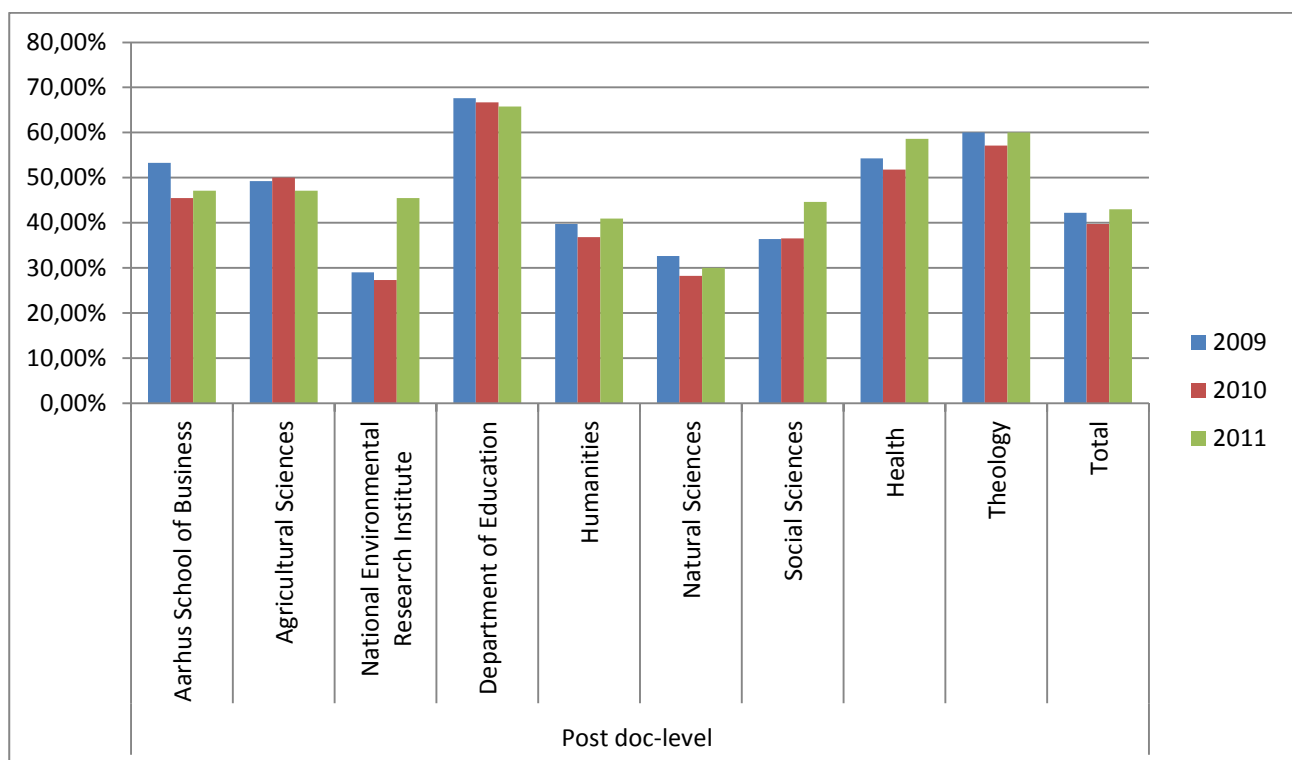


		2012
PhD-level	ARTS	60,1%
	BSS	52,9%
	HEALTH	57,5%
	S&T	38,9%
	TOTAL	49,7%

Female share of post docs

The distributions of female post docs at faculty level have been fairly steady during recent years (2009-2011), except from Aarhus School of Business experiencing a drop by 6,2%, and National Environmental Research Institute, Social Sciences and Health Sciences rising by 16,5%, 8,2% and 4,3%, respectively¹³. The latest numbers (figure 10) reveal a minor leak by 0,6% in the total share of female post docs as well as a 1% fall in the field of Health Sciences. However, women still occupy 56,6% of the post doc positions within the area of Health, followed by Arts, BSS and S&T with a share of 53%, 47,6% and 32,4%, respectively.

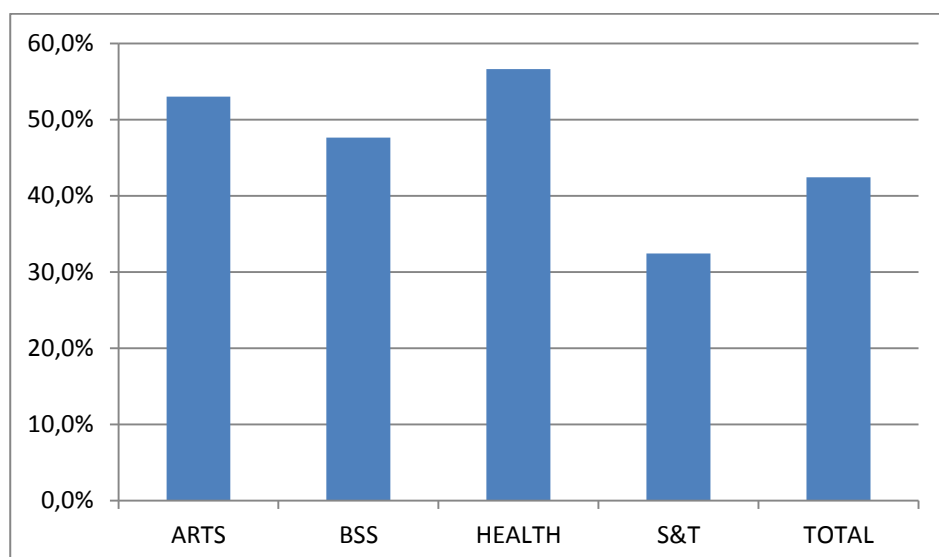
Figure 9: Female share of Post docs at Aarhus University – Development, 2009-2011



¹³The profound structural transformations and faculty mergers may have caused some irregularities in the mobility, flow and substitution of researchers at Aarhus University during 2010 and 2011, leading to peculiar deviations in the share of female (as well as male) researchers at faculty level. The disequilibrium during this period makes it difficult to draw any definite conclusions on the basis of the specific developments in each faculty. However, an interview study designed to investigate the reasons why researchers leave Aarhus University reveals that university mergers and structural transformations have led to uncertainty about future career opportunities and location of workplace among researchers, and hereby contributed to the resignation of some scientific staff (Faber Thidemann, 2010:22).

		2009	2010	2011
Post doc-level	Aarhus School of Business	53,3%	45,5%	47,1%
	Agricultural Sciences	49,2%	50,0%	47,1%
	National Environmental Research Institute	29,0%	27,3%	45,5%
	Department of Education	67,6%	66,7%	65,8%
	Humanities	39,7%	36,8%	40,9%
	Natural Sciences	32,6%	28,2%	30,0%
	Social Sciences	36,4%	36,5%	44,6%
	Health	54,3%	51,8%	58,6%
	Theology	60,0%	57,1%	60,0%
		<i>Total</i>	42,2%	39,7%

Figure 10: Female share of Post docs at Aarhus University distributed on the basis of the main scientific areas, 2012.

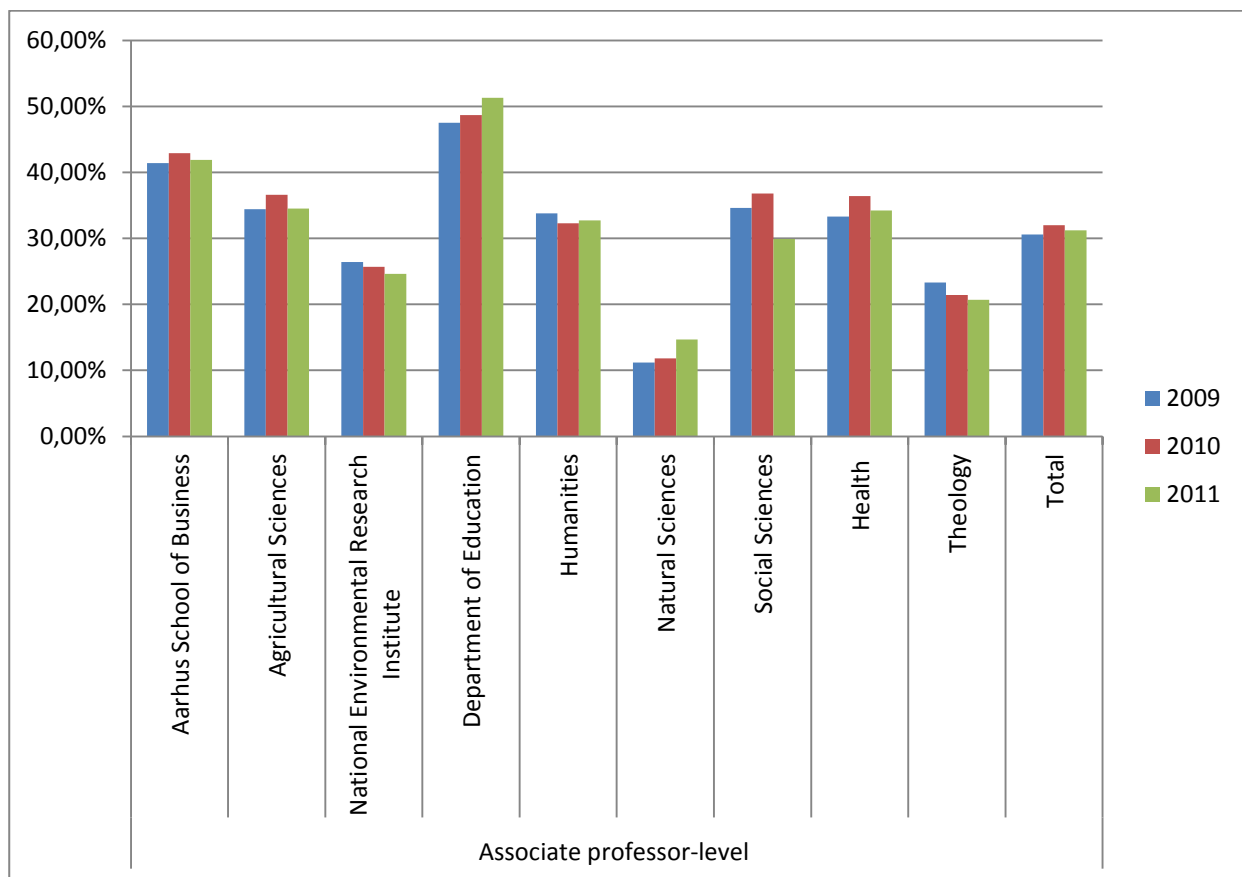


		2012
Post doc-level	ARTS	53,0%
	BSS	47,6%
	HEALTH	56,6%
	S&T	32,4%
	TOTAL	42,4%

Female share of associate professors

The total share of female associate professors at Aarhus University has also been moderately constant during the period from 2009 to 2011. The most notable developments on this matter concern the Department of Education and the Faculty of Natural Sciences experiencing a rise by 3,8% and 3,5%¹⁴, respectively, while the share of female associate professors in Social Sciences has dropped by 4,7%¹⁵. The latest numbers at this career level reveal a slightly positive change in the total share of female associate professors (0,3%) as well as in the area Health (1,7%).

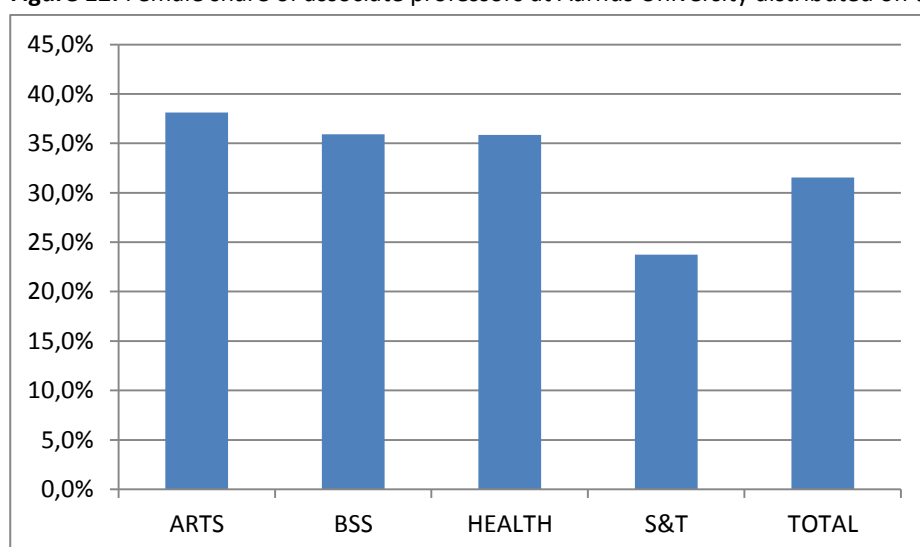
Figure 11: Female share of Associate Professors at Aarhus University – Development, 2009-2011



¹⁴ A part of this development is most likely to be caused by the 10 extra positions as associate professor and 10 full professor with special responsibilities, established by the university management in 2010 (20 positions altogether). If the best applicants for these positions turned out to be female researchers, the University committed itself to pay a part of the salary for a period of time (WHIST, 2011:30).

		2009	2010	2011
Associate professor level	Aarhus School of Business	41,4%	42,9%	41,9%
	Agricultural Sciences	34,4%	36,6%	34,5%
	National Environmental Research Institute	26,4%	25,7%	24,6%
	Department of Education	47,5%	48,7%	51,3%
	Humanities	33,8%	32,3%	32,7%
	Natural Sciences	11,2%	11,8%	14,7%
	Social Sciences	34,6%	36,8%	29,9%
	Health	33,3%	36,4%	34,2%
	Theology	23,3%	21,4%	20,7%
	<i>Total</i>	30,6%	32,0%	31,2%

Figure 12: Female share of associate professors at Aarhus University distributed on the basis of the main areas, 2012.

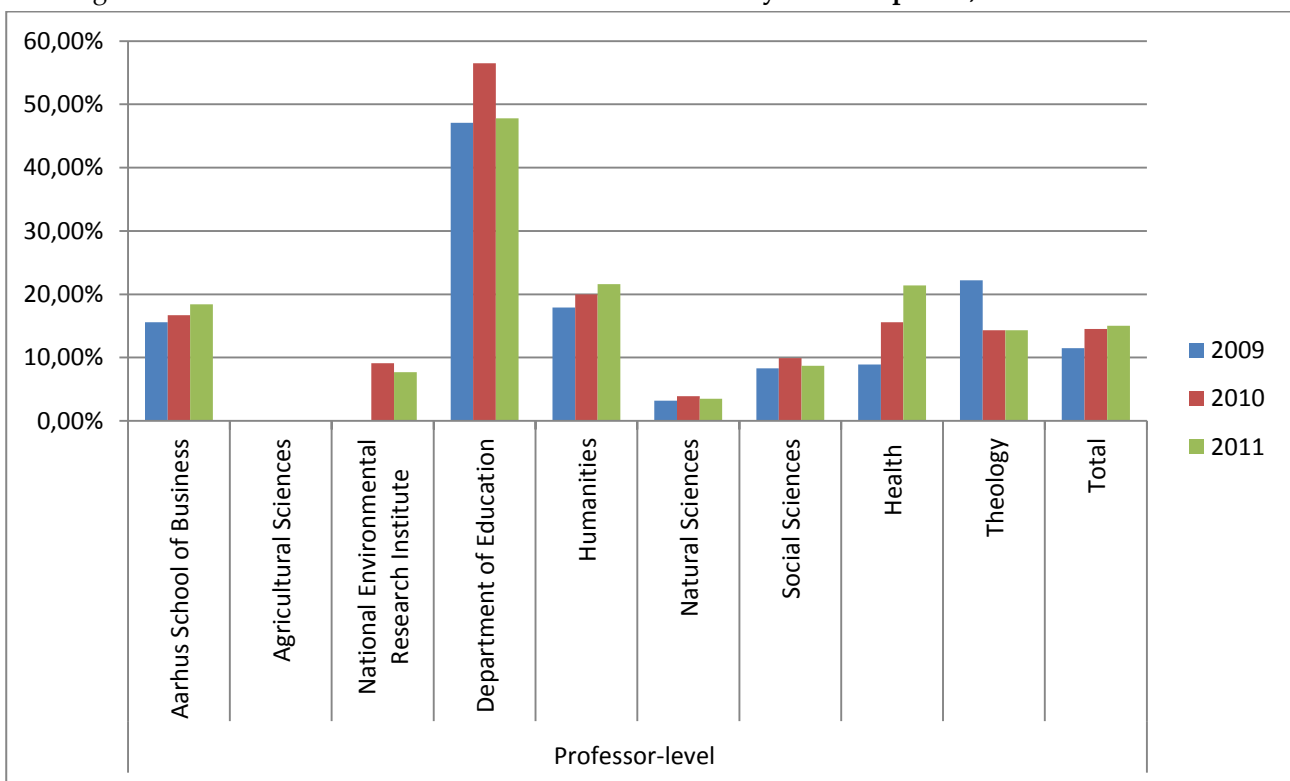


		2012
Associate professor	ARTS	38,1%
	BSS	35,9%
	HEALTH	35,9%
	S&T	23,7%
	TOTAL	31,5%

Female share of full professors

The most encouraging difference is generated in the category of full professors, where the total increase sum up to 3,5% in the period from 2009 to 2011, with Health sciences (12,5%), National Environmental institute (7,7%), Humanities (3,8%) and Aarhus School of Business (2,8%) experiencing the highest increases (figure 12). However the total share of female full professors has decreased by 1% in the recent year, and each of the main areas still has a long way to go, before reaching equality. Especially the area of S&T scores disquietingly low on this dimension.

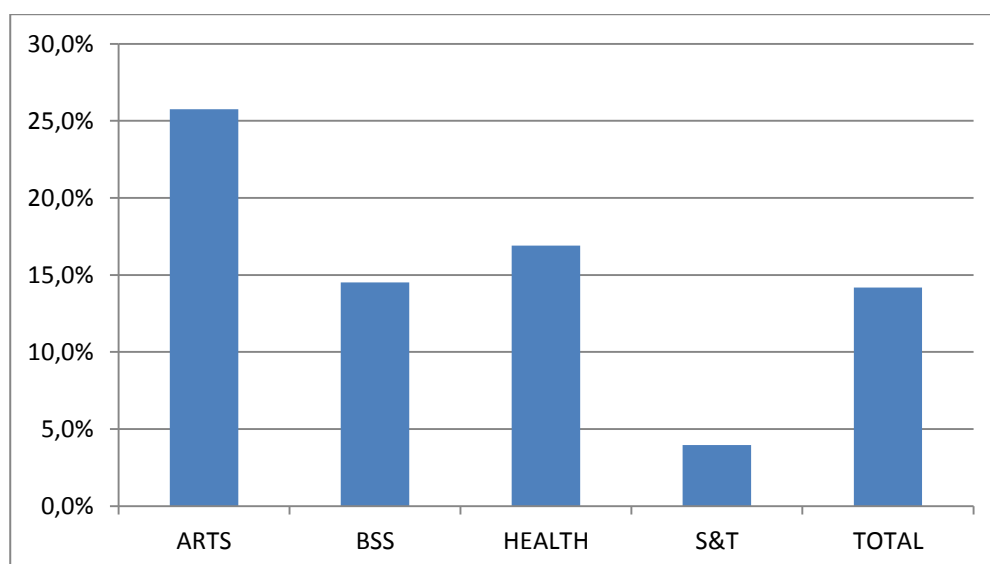
Figure 13: Female share of Professors at Aarhus University – Development, 2009-2011¹⁶



¹⁶ Guest professors are not included in this presentation.

		2009	2010	2011
Professor-level	Aarhus School of Business	15,6%	16,7%	18,4%
	Agricultural Sciences	0,0%	0,0%	0,0%
	National Environmental Research Institute	0,0%	9,1%	7,7%
	Department of Education	47,1%	56,5%	47,8%
	Humanities	17,9%	20,0%	21,6%
	Natural Sciences	3,2%	3,9%	3,5%
	Social Sciences	8,3%	9,9%	8,7%
	Health	8,9%	15,6%	21,4%
	Theology	22,2%	14,3%	14,3%
	<i>Total</i>	11,5%	14,5%	15,0%

Figure 12: Female share of professors at Aarhus University distributed on the basis of the new main areas, 2012.



		2012
Professor	ARTS	25,8%
	BSS	14,5%
	HEALTH	16,9%
	S&T	4,0%
	TOTAL	14,2%

Conclusions

The report at hand provides a series of statistics on recent developments in gender distribution among university managers, research staff (total, faculty level and career level), and changes in the share of appointment committees representing both women and men, at Aarhus University. The statistics reveal a disquietingly low share of women in university top management and a significant leak in the numbers of female researchers at each step of the academic ladder, from PhD- to full professor level. However, the outcome of recent years' comprehensive initiatives on gender equality has been positive and things are slowly changing for the better. Today female researchers occupy nearly half of the PhD-positions, 42% of the post doc-positions and 32% of the associate professorships. The most encouraging development is to be found among full professors, where the total increase sum up to 3,5% from 2009 to 2011. However, the newest numbers (2012) regarding full professorships reveal a leak in the female share by 1%.

As in the rest of Europe, Aarhus University is experiencing a pertinent challenge recruiting female researchers in the field of Science and Technology. Only 4% of the S&T full professors are women, and the total share of female researchers in this area merely comprises 30%, while the areas of Health and Arts, recruiting a majority of female students, also score high on relative shares of women in research.

References:

Faber, Stine Thidemann (2010) *"Fravalgsundersøgelsen – en undersøgelse af afbrudte karriereforløb blandt videnskabelige medarbejdere på Aarhus Universitet.*

PRAGES (2009). *"Practising Gender Equality in Science - Guidelines for Gender Equality Programmes in Science"*, PRAGES, FP7, EU.

STAGES (2011). *"Structural Transformation to Achieve Gender Equality in Science – Work Programme"*, STAGES, FP7, EU.

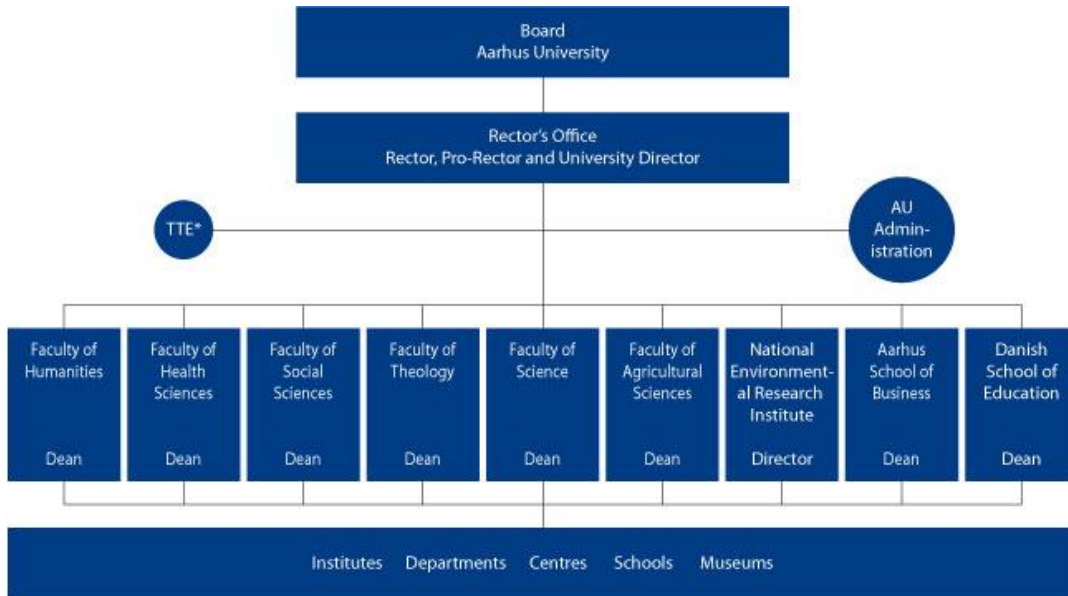
Staahe, Bertel (2011). *"En forskerstab i vækst – forskerpersonale og forskerrekruttering på danske universiteter 2007-2009"*, UNI-C. København.

Taskforce for ligestilling (2009). *"Alle Talenter i Spil - Ligestillingsinitiativer på Aarhus Universitet 2009"*.

WHIST (2011). *"Women's careers hitting the target: gender management in scientific and technological research – Final report of the experimentation activities at Aarhus University"*, Kalpazidou Schmidt, Evanthia, WHIST, FP7, EU.

Annex

Figure 1: Organisation chart of Aarhus University until 2010



*) Technology Transfer & Entrepreneurship

Figure 2: Organisation chart of Aarhus University after 2010

