

PDF hosted at the Radboud Repository of the Radboud University Nijmegen

The following full text is a publisher's version.

For additional information about this publication click this link.

<http://hdl.handle.net/2066/181847>

Please be advised that this information was generated on 2018-04-11 and may be subject to change.

3 The NETHERLANDS

3.1 INTRODUCTION

3.1.1 Participating departments in the Radboud University, the Netherlands

The participating STEM institute at the Radboud University Nijmegen in the Netherlands is the Institute for Mathematics, Astrophysics and Particle Physics (IMAPP). The IMAPP is one of the six research institutes at the Science faculty, and is divided into four departments: Mathematics, Astrophysics, Theoretical High Energy Physics, and Experimental High Energy Physics. The Science faculty is one of the seven faculties of Radboud University.

The participating SSH institute is the Institute for Management Research (IMR). The IMR is the multidisciplinary research institute of the Nijmegen School of Management (NSM). The NSM is one of the seven faculties of Radboud University. The IMR conducts top-level research on the governance of complex societal systems. The IMR is divided into five sections: Business Administration, Economics and Business Economics, Political Science, Public Administration, and Geography, Planning and Environment. Each section is divided into different departments.

The Radboud University Nijmegen has a gender institute: The Institute for Gender Studies, founded in 1985. It is a lively interdisciplinary institute for teaching and research into women, sexuality and gender. With five professors, two associate professors, four university lecturers and seventeen PhD researchers, the Institute for Gender Studies is the largest institute in its field in the Netherlands.¹ A number of researchers from the IMR are affiliated to the gender institute, but no researchers from the IMAPP.

3.1.2 Available data: Research projects

3.1.2.1 STEM

The information on research projects at the IMAPP was requested at the managing director of the institute. He received the data from the financial department. There were 36 externally funded projects over 200.000 Euros running in the time frame 1.1.2013 until 31.12.2013. We selected the 21 projects with the highest amount of money to analyse. The following information was available: name of the project, finances, duration, and the name of the project leader. No information was available on other team members, neither did we receive information on the type of contract of the project leader. We looked for the project descriptions online. This was a very time consuming task as not all projects were easily available. Only rarely information was

¹ <http://www.ru.nl/genderstudies/english/>

provided on the methods and theories used in the projects, as well as the expected results. We analysed 21 project descriptions from the IMAPP (see Table 1).

Table 1: Research projects IMAPP

Nr	Project name	Funding body	Starting date	End date	Amount of funding	Sex of project manager
1	ERC -Lofar-Auger	European Commission	01-01-09	31-07-14	3.460.000	M
2	Spinozaprijs Falcke	NWO	01-01-12	31-12-16	2.500.000	M
3	Spinozaprijs Moerdijk	NWO	01-10-12	31-12-17	2.500.000	M
4	Subatomic Physics	NWO	01-12-10	31-03-16	800.000	M
5	VIDI White dwarfs twinkle like black holes	NWO	01-11-12	31-10-17	800.000	M
6	VIDI Noncommutative geometry	NWO	22-11-13	21-11-18	800.000	M
7	VIDI Haverkorn	NWO	01-04-11	31-12-16	794.440	F
8	Math. and comp. relevant dualities	NWO	01-09-09	01-02-14	410.848	F
9	Traces of representation	NWO	01-09-12	31-10-16	360.000	M
10	The logic of composite quantum systems	NWO	01-09-11	31-08-16	337.631	M
11	BlackGEM	NWO	01-05-13	31-12-15	302.000	M
12	FGQ Marie Curie	European Commission	01-03-13	31-08-16	274.504	M
13	NOVA support	NOVA	01-07-09	28-02-13	269.000	M
14	On the origin of time and scale	NWO	20-09-13	30-09-16	250.000	F
15	Spiral arms in accretion disk	NWO	01-09-13	30-09-17	249.115	M
16	Formation of multiple stellar populations	NWO	01-01-13	28-02-17	247.115	M
17	From a binary to a single star	NWO	15-09-11	30-09-14	232.000	M
18	The noncommutative geometry	NWO	01-06-10	31-08-14	213.513	M
19	Topos theory	NWO	15-06-09	30-06-13	212.655	M
20	Reality questions	NWO	01-09-10	31-08-14	210.013	M
21	Arithmetic and motivic aspects	NWO	01-09-13	31-08-17	208.115	M

Note: All these projects are externally funded

3.1.2.2 SSH

The information on externally funded research projects at the IMR was requested at the financial department of the institute. We selected only projects above 200.000 Euros, which were twenty projects in total. The financial department provided us with the following information of the research projects that were running in the time frame 1.1.2013 until 31.12.2013: name of the project, finances, duration, and the names of team members. Due to absences of staff in the financial department, it was difficult to get the requested data far in advance. No information was available on the type of contract of the project leaders and other team members. The sex of the members of the team was based on the information received from the financial department. We do not know about the accuracy of this data. We looked for the project descriptions online. Most of the project descriptions could be found on the website of the IMR. If available, we read the extensive project information on the project website. Only rarely information was provided on the methods and theories used in the projects, as well as the expected results. We analysed 20 project descriptions from the IMR (see Table 2).

Table 2: Research projects IMR

Nr	Project name	Funding body*	Starting date	End date	Financed extern	Financed intern	Total amount of funding	Sex of project manager	Men on team**	Women on team**
1	Tools for Orchestrating Value Chains		1-2-2012	30-6-2015	476.793	94.760	571.553	F	1	2
2	Breng Kenniscentrum 2013		16-8-2013	16-8-2017	187.900	62.900	250.800	M	1	
3	Climate proof cities		1-1-2010	2-3-2015	217.043	57.510	274.553	M		
4	Construction of a Stakeholder		1-1-2012	31-12-2015	326.546	86.938	413.484	M	1	
5	Innovation and Growth		1-4-2013	31-3-2017	474.675	0	474.675	M	2	1
6	STAR-FLOOD	EU	1-10-2012	1-4-2016	319.287	0	319.287	M	2	
7	STAGES	EU	1-1-2012	31-12-2015	314.572	279.763	594.335	F		2
8	The Governance of Adaptation		1-1-2010	28-1-2015	526.084	188.594	714.678	M		
9	Help, a peak?!		1-11-2008	2-12-2014	187.439	94.547	281.986	M		
10	Keuzevrijheid pensioenfondsen		1-1-2012	16-7-2015	294.418	95.213	389.631	F	2	

11	EUBORDERSCAPES	EU	1-6-2012	1-6-2016	459.362	0	459.362	M		
12	Cross-border shopping practices	NWO	1-11-2010	30-9-2015	225.000	57.172	282.172	M		
13	Verankeren van Duurzame Diversiteit	NWO	1-1-2012	31-12-2015	250.000	82.560	332.560	F		
14	Food for thought	NWO	1-5-2011	1-12-2015	206.706	75.695	282.401	M	1	
15	Future Value Chains	NWO	1-11-2013	31-10-2017	173.115	62.607	235.722	F		1
16	Gentrification 2.0	NWO	1-4-2013	31-8-2016	249.959	101.704	351.663	M	1	
17	Grounding Land Governance	NWO	1-1-2011	31-12-2015	195.706	76.534	272.240	F	1	
18	Public Negotiations	NWO	1-10-2013	1-10-2017	171.363	96.473	267.836	F	1	
19	Parkagent		1-12-2010	31-3-2015	287.000	30.755	317.755	M	1	
20	Systeemdynamica in de zorg		1-1-2009	1-11-2015	198.962	96.365	295.327	M		

* If the cell is empty, no information was available

** These exclude the project manager

3.1.3 Available data: Curricula

The information on curricula was requested at the Education Offices of both the IMAPP and the IMR. They provided us with the names of the MSc courses of the 2013/2014 academic year, the number of ECTS, the names of the lecturers, the course descriptions, and the aim of the courses. It was quite easy to get this information. Only for the IMR we received information on the course bibliographies. However, in many cases, the syllabus stated that the course literature was “to be announced via Blackboard” (online Blackboard Learning System).

3.1.3.1 STEM

We analysed 26 course descriptions of the MSc courses in the academic year 2013/2014 that were offered by the IMAPP. As the IMAPP MSc programmes are two-year programmes, most courses are taught biannual. One course did not contain a course description and was therefore deleted from the analyses (see Table 3).

Table 3: Titles of MSc courses IMAPP

Nr	Title of course	ECTS	MSc
1	Computer algebra	6	MAT
2	Complexity Theory	6	MAT
3	Regression Analysis and non-parametric Statistics	6	MAT
4	Reële Functies	6	MAT
5	Forceren (Onafhankelijkheidsbewijzen in de verzamelingenleer)	4	MAT
6	Numerical Methods	3	P+A
7	Particle Physics Phenomenology	6	P+A
8	Theoretical Foundations of Elementary Particle Physics	9	P+A
9	Nuclear Physics	6	P+A
10	Professional Preparation	1	P+A
11	Cosmology	6	P+A
12	Telescope Observing	2	P+A
13	Quantum Field Theory	6	P+A
14	Monte Carlo Techniques	6	P+A
15	Introduction to String Theory	6	P+A
16	Data Analysis	3	P+A
17	CERN Summer Student Programme	9	P+A
18	Student Seminar Particle and Astrophysics	2	P+A
19	Introduction to C++	3	P+A
20	Astroparticle Physics	6	P+A
21	Introduction to Particle Physics Experiment Analysis	6	P+A
22	Cosmic Magnetism	6	P+A
23	Advanced Stellar and Binary evolution	6	P+A
24	Nikhef Topical Lectures	1	P+A
25	Lie Algebras in Particle Physics	3	P+A
26	Asteroseismology	6	P+A

Note: MAT = Mathematics, P+A = Physics and Astronomy

No information was available on the type of course elective/mandatory

3.1.3.2 SSH

We analysed 135 course descriptions of the MSc courses in the academic year 2013/2014 that were offered by the IMR. Master theses, master projects, and the course Preparing for master thesis were excluded from the course list. We reported on the remaining 99 courses (see Table 4).

Table 4: Titles of MSc courses IMR

Nr	Title of course	ECTS	Elective	Department	Sex of course coordinator	Gender in curriculum
1	A Critical Approach to Strategic HRM	6	NO	BA	M	NO
2	Account Management	6	YES	BA	M	NO
3	Brand Management	6	NO	BA	F	NO
4	Buying Behaviour	6	NO	BA	F	NO
5	Competition and Co-operation	6	YES	BA	M	NO
6	Computer Simulation Models and Organizational Decision Making	6	NO	BA	M	NO
7	Corporate Strategy	6	NO	BA	M	NO
8	Dynamics of Business Strategy	6	NO	BA	M	NO
9	European Human Resource Management	6	YES	BA	M	NO
10	Forms of Responsible Organizing	6	NO	BA	F	YES
11	Gender and Diversity in Organizations	6	NO	BA	F	YES
12	Group Model Building I	6	NO	BA	M	NO
13	Group Model Building II	6	NO	BA	M	YES
14	High Performance Work Systems	6	NO	BA	M	YES
15	HRM Research and Methods	6	NO	BA	F	NO
16	Human Resource Management and the Flexible Workforce	6	NO	BA	F	YES
17	International Business	6	NO	BA	M	NO
18	International Human Resource Management	6	YES	BA	M	NO
19	Intervention in Organizations	6	NO	BA		NO
20	Marketing Management	6	NO	BA	M	NO
21	Methodology in Marketing and Strategy Research	6	NO	BA	M	NO
22	Organization Design	6	NO	BA	M	NO
23	Organizational Change	6	NO	BA	F	YES
24	Organizational Research Methods	6	NO	BA	F	NO
25	Organizations and Society	6	NO	BA	M	NO
26	Product Management	6	NO	BA	M	NO
27	Research Methodology	6	NO	BA	M	NO

28	Social, Sustainable and Technological Innovation	6	YES	BA	M	NO
29	Strategic Change	6	NO	BA	M	NO
30	Strategic Decision Making	6	NO	BA	M	NO
31	Strategic Scenarios and Business Models	6	NO	BA	M	NO
32	Sustainability Project: Building the Green Economy Index	6	NO	BA	M	NO
33	Global Marketing	6	YES	BA ECON	M	NO
34	Beleidsimplementatie & evaluatie	6	NO	PA	F	NO
35	Beleidsonderzoek & advies	6	NO	PA	F	NO
36	Besturen van veiligheid	6	NO	PA	M	NO
37	Bestuurlijke ethiek	6	NO	PA	M	NO
38	Bestuurskundige onderzoeksbenaderingen	6	NO	PA	M	NO
39	Comparative Public Administration	6	NO	PA	F	NO
40	Europeanization of Government and Policy	6	YES	PA	F	NO
41	Multi-Level Governance	6	YES	PA	M	NO
42	New Public Governance	6	NO	PA	M	NO
43	Organisatie & management	6	NO	PA	F	NO
44	Public Management, Risks and Accountability	6	YES	PA	M	NO
45	Research Traditions in Public Administration	6	NO	PA	M	YES
46	Vergelijkende bestuurskunde	6	NO	PA	M	NO
47	Excursion	6	NO	CICAM	M	NO
48	Accounting and Control	6	NO	ECON	M	NO
49	Accounting and Governance	6	NO	ECON	M	NO
50	Accounting Information Systems	6	NO	ECON	M	NO
51	Advanced Accounting, Governance and Control	12	NO	ECON	M	NO
52	Advanced Financial Economics	6	NO	ECON	M	NO
53	Cases in Corporate Finance	6	NO	ECON	M	NO
54	Culture and Economic Behaviour	6	NO	ECON	M	NO
55	Current Issues in Globalization	6	NO	ECON	M	YES
56	Financial Risk Management	6	NO	ECON	M	NO
57	International Financial	6	NO	ECON	M	NO

	Markets					
58	International Macroeconomics and Policy	6	NO	ECON	M	NO
59	International Trade and Policy	6	NO	ECON	M	NO
60	Methods of Empirical Analysis	6	NO	ECON	M	NO
61	Pluralisms in Economics	6	NO	ECON	F	NO
62	Changes in World Politics: The Rise of the BRIC Countries	6	NO	POL	M	YES
63	Duurzaamheidspolitiek: analyse en sturing	6	YES	ENVIR	M	NO
64	Methodologie voor MMW en Vomathe	6	NO	ENVIR	M	NO
65	MMW: Kernthema's / Social and Political Sciences of the Environment: Key Issues	6	YES	ENVIR	M	NO
66	Aspects of Local and Area Development: International Comparison	6	YES	PLAN	M	NO
67	Locatie- en gebiedsontwikkeling, proces en inhoud	6	YES	PLAN	M	NO
68	Marktordening en ruimtelijke ontwikkeling	6	NO	PLAN	M	NO
69	Urban Networks, Accessibility and Mobility	6	YES	PLAN	M	YES
70	Verdieping recht en instituties in de ruimtelijke planning	6	YES	PLAN	M	NO
71	Water Management and Spatial Planning	6	YES	PLAN	M	NO
72	Comparative Planning	6	YES	PLAN ENVIR	F	NO
73	European Spatial Planning and the EU Territorial Cooperation Agenda	6	YES	PLAN ENVIR	F	NO
74	International Environmental Politics (ESEP)	6	YES	PLAN ENVIR	M	NO
75	The EU and domestic Impact: Economy, Space and Environment	6	YES	PLAN ENVIR	M	NO
76	Institutional Perspectives on Societal Change and Spatial Dynamics	6	YES	PLAN ENVIR	M	NO
77	Advanced Research Methods	6	NO	POL	F	NO
78	Challenges to 21st Century Representative Democracy	6	YES	POL	F	NO

79	Contemporary Debates in Political Theory	6	YES	POL	M	YES
80	Cooperation and Conflict in the 21st Century	6	YES	POL	F	NO
81	Current Debates in International Relations Theory	6	YES	POL	M	NO
82	Global Political Economy	6	YES	POL	F	YES
83	Power and Persuasion in Politics	6	NO	POL	M	NO
84	Power in Political Theory	6	YES	POL	M	YES
85	Recognition, Redistribution and Citizenship	6	YES	POL	M	YES
86	Sociology, Philosophy and Ethics of Research	6	YES	POL	M	NO
87	The Politics of Reform	6	YES	POL	F	YES
88	Theoretical Approaches to Comparative Politics: Actors & Institutions	6	YES	POL	M	YES
89	City- and Region Marketing	6	NO	GEO	M	NO
90	Cross Border Governance	6	YES	GEO	M	NO
91	Economic Geographies: Foundations, Critiques and Alternatives	6	YES	GEO	M	NO
92	Economy, Space and Culture in Nijmegen	6	YES	GEO	M	NO
93	Geopolitics of Borders	6	YES	GEO	M	NO
94	Globalising Cities & Hinterlands	6	NO	GEO	M	YES
95	International Migration, Globalization & Development	6	YES	GEO	M	YES
96	Multiculturalism, Diversity and Space	6	YES	GEO	F	YES
97	Our Common Ground: Human Geographic Research Colloquium	6	YES	GEO	M	NO
98	Urban and Cultural Geography	6	YES	GEO	M	YES
99	Gender Theories and Equality Policies	6	YES	POL	F	YES

Note: BA = Business Administration, PA = Public Administration, CICAM = Centre for International Conflict - Analysis & Management, ECON = Economics, POL = Political Science, ENVIR = Environmental Sciences, PLAN = Planning, GEO = Human Geography

3.2 MAPPING A GENDER DIMENSION IN EXISTING RESEARCH AND CURRICULA – STEM department

3.2.1. Research projects

In the year 2013 there were 68 externally funded projects in the IMAPP. 36 of them had a funding amount over 200.000 Euros. Some of the projects were brought in by staff members who got a grant in their previous research institution. In a conversation with the managing director of IMAPP, it became clear that most of the projects that get funding around 200.000 Euros are requested with the aim to hire a PhD candidate for four years. Grants with a budget of around 300.000 Euros are generally used to hire a PhD candidate for four years and a postdoc for two years. Three of the project managers were women, 18 were men.

18 of the 21 projects we analysed were funded by the Netherlands Organisation for Scientific Research (NWO): 2 VENI, 3 VIDI, 7 Free Competition, 1 TOP grant, 2 Spinoza Prizes, and 3 others. Two IMAPP professors have received a Spinoza Prize in 2011 and 2012. The prize, which is worth €2.5 million, is the highest scientific award in the Netherlands. It's awarded to Dutch researchers who are at the very top of their scientific field, nationally and internationally.

VIDI is one of the three finance forms of the so called 'Vernieuwingsimpuls' of the Netherlands Organisation for Scientific Research (NWO). VIDIs are awarded to excellent researchers who, after having been promoted, have already conducted a few years of successful research. The scientists belong to the best ten to twenty percent in their field. With a VIDI they can do research for five years. The other two are VENIs (for newly promoted researchers) and VICI (for very experienced researchers). The goal of these grants is to stimulate innovation in scientific research. The grants have been set up in cooperation with the ministry of Education, Culture and Science (OC&W), the Royal Netherlands Academy of Arts and Sciences (KNAW) and the Dutch universities.

None of the projects have a gender or gender-related theme. The next section contains shortened descriptions of the research projects in the IMAPP.

ERC -Lofar-Auger

From Black Holes to Ultra-High Energy Cosmic Rays: Exploring the Extremes of the Universe with Low-Frequency Radio Interferometer. This study looks at the origin of high-energy cosmic particles, using telescopes such as LOFAR.

Spinozaprijs Falcke (Spinoza prize)

As the Spinoza prize is awarded based on nominations by for example the university board, there is no project description written for this funding. Prof. Falcke received a Spinoza Prize for his research on black holes and cosmic particles.

Spinozaprijs Moerdijk (Spinoza prize)

As the Spinoza prize is awarded based on nominations by for example the university board, there is no project description written for this funding. However, the research of Prof. Moerdijk contains the following: Topology studies spaces and describes their algebraic characteristics. In this way, geometric objects can be classified algebraically,

and from this algebraic classification it can be demonstrated that a space, with some mathematical pushing and pulling, can be deformed into another space with the same algebraic characteristics. Logic studies mathematical proofs and determines exactly how mathematical objects can be described, often with the aid of sets. In his research, Moerdijk combines topology with mathematical logic. In 'topological terms' you could say that he deforms logic with concepts and insights from topology.

Subatomic Physics

Subatomic physics or particle physics investigates the elementary constituents of matter and radiation. The particles that are studied are the building blocks of atoms, like electrons, protons and neutrons, the particles that makes up light - the photon - and several more exotic ones. These particle can be studied by colliding them at very high energies and detecting the particles produced in the interaction (accelerator based physics) or by observing particles produced by extremely energetic processes in the universe (astroparticle physics). This project tries to answer some of the big questions on the origin of our Universe: What is the origin of mass? Where has the anti-matter of our Universe gone? What is the nature of Dark Matter, that seems to be five times more abundant than ordinary matter?

VIDI White dwarfs twinkle like black holes

At first sight, white dwarfs and black holes have little in common. But both attract matter and eject jets of gas into space. The researchers will study this similarity to understand the effect of relativity in this important astrophysical process.

VIDI Noncommutative geometry and quantum lattice gauge fields

The project studies the construction of a continuum limit of a quantum lattice gauge theory, using techniques from noncommutative geometry. A key role will be played by lattice subdivisions, translated to the observable level through appropriate algebra maps and the development of a suitable renormalization scheme.

VIDI Haverkorn (Title unknown)

This project will investigate the magnetic field of the Milky Way using the LOFAR telescope. Due to its low frequency range, LOFAR, the Low Frequency Array, is sensitive to low magnetic field strength far away from the Galactic disk, a regime that has hardly been probed before.

Mathematically and computationally relevant dualities

This project focuses on dualities which are “dually” relevant, both in mathematics and informatics.

Within mathematics, dualities underlie fundamental connections between algebra and geometry, and between logical syntax and semantics, e.g. in the various dualities extending Gelfand and Stone. Such dualities also appear in informatics where they relate (program) logics and computations. The aim of this project is to significantly advance interdisciplinary interaction between topological methods in algebra and coalgebraic methods in informatics by engaging two PhD students and two senior researchers in addressing cutting-edge problems pertinent to both disciplines, and to seek shared solutions and shared understanding.

Traces of representation

No description available.

The logic of composite quantum systems

Over the past decade, the possibility of quantum computers and the reality of quantum information theory have led to a remarkable cross-fertilization between computer science, mathematics, logic, and physics. This proposal lies in the interface of these fields, as reflected by a team of applicants consisting of a computer scientist, a mathematical physicist specializing in quantum theory, and a pure mathematician with a strong background in logic.

BlackGEM

The BlackGEM project is a wide-field telescope array dedicated to measure the optical emission from pairs of merging neutron stars and black holes. A few hours prior to the optical emission, these violent events should also emit copious amounts of gravitational radiation in the form of gravitational waves — ripples in the fabric of space-time itself.

FGQ Marie Curie

One of the projects that is conducted by the Marie Curie Fellow has the following content: We generalise Atiyah and Hirzebruch's vanishing theorem for actions by compact groups on compact Spin-manifolds to possibly non-compact groups acting properly and cocompactly on possibly non-compact Spin-manifolds. As corollaries, we obtain some vanishing results for an \hat{A} -type genus.

NOVA support

This research team studies the following research questions: At the end of its life, a massive star explodes and ejects its outer layers. The stellar core collapses to form a neutron star or a black hole. These are the densest objects that exist, and the ones with the strongest gravitational fields. What are the properties of matter at the extreme density in the interior of a neutron star? What are the observational signatures of black holes? Can we observationally verify the extraordinary predictions of General Relativity for the properties of curved space-time near these objects? How do particles and radiation behave near these compact objects? What happens when two compact objects orbiting each other eventually merge? Is this the origin of the most powerful explosions we know, the enigmatic gamma-ray bursts?

On the origin of time and scale

This VENI grant project from the Dutch national science foundation (NWO) combines a novel approach to relativity called 'Shape Dynamics' (where scale is emergent) with an exciting conjecture called 'Holography' (where time is emergent) to make new predictions for the early Universe and to understand aspects of quantum gravity.

Spiral arms in accretion disk

Accretion disks are ubiquitous in the Universe, but their physics is still very poorly understood. In particular the angular momentum and matter transport through accretion disks, and the sudden viscosity changes associated with disk outbursts as seen in compact binaries, are not explained. The aim of this project is to understand the

importance of spiral arms to the physics of accretion disks and in particular the transport of angular momentum through the disk.

Formation of multiple stellar populations in star clusters

A 'self-enrichment' scenario has emerged in which gas that has been expelled by the slow winds of relatively short-lived stars accumulates in the deep gravitational potential well of the cluster. This gas has been processed by nuclear reactions in stellar interiors, and may cool sufficiently that a new generation of stars is formed in the core of the cluster. According to most models, the cluster dynamics subsequently results in the loss of the majority of first-generation stars, leaving a large proportion of second-generation stars in the currently observed cluster. We propose to examine this scenario by performing unprecedented self-consistent simulations of massive clusters, in which we model the gravitational stellar dynamics, the evolution of the stars and the hydrodynamics and radiative feedback of the ejected gas simultaneously. Our aim is to make major steps forward in understanding (1) under what circumstances sufficient amounts of processed gas can be retained in the cluster to form new stars, and (2) how the cluster dynamics affects the final proportion of first and second-generation stars.

From a binary to a single star

This is VENI grant project from the Dutch national science foundation (NWO). Sometimes a binary star merges into a single star. This star has unusual properties and can be the forerunner of a powerful explosion, for example a gamma flash or supernova. The researchers will develop a new method to investigate these stars.

The Noncommutative Geometry of BRST-quantization

The classical gauge field theory underlying the Standard Model has already been reformulated in terms of noncommutative geometry by Connes and others. The current research project aims for a quantization of the theory, i.e. take into account the quantum effects necessary to describe elementary particles. As a first step towards a mathematical construction of the full (nonperturbative) theory, it attempts to formulate perturbative quantum gauge theories in noncommutative geometrical terms. A rigorous formulation of such a 'quantum noncommutative manifold' may well have implications for other fields in mathematics, as already has been witnessed by the successful applications of ideas from quantum field theory in differential and algebraic geometry.

Topos theory, noncommutative geometry, and quantum logic

Topos theory and noncommutative geometry are areas of modern mathematics that may both be seen as vast extensions of topology, each providing its own generalized notion of space. In topos theory one regards the so-called locales of lattice theory as spaces, whereas the C^* -algebras of functional analysis define spaces in the noncommutative sense. The aim of the project is to relate these different notions of space to each other and to quantum theory.

Reality Questions for some Period Mappings

The past decade there has been a good deal of progress in the construction of period mappings from moduli spaces of Del Pezzo surfaces to ball quotients. The associated lattice groups of hyperbolic space are generated by complex reflections. We wish to

study the question of reality for the moduli space and the period mapping. Basic examples that have been worked out in the literature are the configuration space of six points on a line (by Yoshida) and the moduli space of cubic surfaces (by Allcock, Carlson and Toledo). Our main focus will be to extend these methods for the configuration space of eight (and twelve) points on a line and for the moduli space of quartic curves. After understanding these two key examples we wish to understand the general principles of real geometry in this context.

Arithmetic and motivic aspects of the Kuga-Satake construction

The central theme of the project is the Kuga-Satake construction. The first main goal is to prove the Tate conjecture for surfaces of geometric genus 1 in characteristic 0. This would provide a new class of varieties where, using advanced techniques, we can obtain positive results on one of the fundamental open problems in algebraic geometry. A second main topic is the question whether the Kuga-Satake correspondence is given by an algebraic cycle, as predicted by the Hodge conjecture. This is a fundamental open problem. Related to this is the question whether we can define a Kuga-Satake construction over an arithmetic base; this leads us to study the morphism of moduli spaces given by the Kuga-Satake construction. Our goal is to prove that this morphism is defined over a number field and that it extends to mixed characteristics.

3.2.2 Curricula

The MSc programmes within the IMAPP are two-year programmes. Mathematics MSc students in the IMAPP department have a limited number of compulsory courses they should attend within the IMAPP and are next to that part of the Dutch Master Program in Mathematics (Mastermath). This is a national programme: every semester the Departments of Mathematics of Dutch universities organise joint courses in mathematics.²

The MSc programmes are offered in four tracks: a Research track, a Communication track, an Education track, and a Management track. At this moment, only the Research track has a complete program in the English language. The other tracks are primarily aimed at the Dutch market and the Dutch educational system, and are therefore taught in Dutch.

In one of the MSc courses in the academic year 2013/2014 a woman lecturer was teaching, together with a man lecturer. In all other MSc courses, all lecturers were men. The woman lecturer is an assistant professor on a permanent 0.8 FTE contract. The percentage of female students varies across the MSc programmes offered by IMAPP (see Table 5).

² <http://www.ru.nl/opleidingen/master/algebra-topology/mastermath/>

Table 5: Nr of students enrolled in MSc programmes IMAPP 2013/2014

MSc Programme	Total number of students	% female students
Mathematics	54	33%
Physics and Astronomy	62	19%

Most of the descriptions of the course aims refer to “the student” or “students”. In two Particle Physics courses, the descriptions refer to the masculine form of students only, for example: “The student has a good knowledge of strong interactions (QCD) of the Standard Model (SM) and is able to calculate basic QCD Feynman Diagrams. He knows about the partonic structure of the proton” (Particle Physics Phenomenology). In two courses, the descriptions refer explicitly to both masculine and feminine forms, for example: “The student will familiarize him/herself with the newest observatories connected to astroparticle physics and their implications on our understanding of the origin of these particles” (Astroparticle Physics).

None of the MSc courses mention gender in the content description. The next section contains shortened descriptions (some translated from Dutch into English) of every course. Considering the language of the course descriptions, five of the courses seemed to be lectured in Dutch (four from the mathematics MSc programme).

Computer algebra

Introduction in the computer algebra. Focus is on algebra and algorithms.

Complexity Theory

Complexity theory is an area at the interface of mathematics and informatics in which problems are classified according to the necessary means to solve them.

Regression Analysis and non-parametric Statistics

The linear model and logistic regression are the most widely used statistical tools, and therefore also the most widely abused tools. When analysing data, a mathematician should be aware of all the pitfalls that could be there. This course intends to make the students aware of this, and offer solutions and alternative methods to analyse data, such as non-parametric shape-restricted regression.

Reële Functies (Real Functions)

The course deals with functions on an interval.

Forceren (Onafhankelijkheidsbewijzen in de verzamelingenleer)

The main aim is to gain insight in the way Paul Cohen proved a function 50 years ago with the method that Goedel used 75 years ago.

Numerical Methods

This course covers theoretical properties and practical aspects of numerical methods.

Particle Physics Phenomenology

Introduction to the elements of the Standard Model of elementary particle physics

Theoretical Foundations of Elementary Particle Physics

For a complete overview of particle physics, this course can be combined with the course 'Experimental Foundations of Elementary Particle Physics'.

Nuclear Physics

Elementary nuclear properties, Semi-empirical mass formula, Shell model, Single-particle aspects, Collective models. Nuclear instability, Interactions of radiation with matter. Detection methods for radiation, Biological effects of radiation, Industrial applications, Nuclear medicine: CT-scan, PET-scan, MRI-scan, Radiotherapy. Nuclear power generation: Fission. Nuclear fusion: Nucleosynthesis

Professional Preparation

This course prepares for the transition from being a student to physicist or astronomer on the job. Under the guidance of the trainer a CV and a letter of application will be composed and commented on in a group process.

Cosmology

Cosmology is one of the fundamental topics in modern astrophysics. In these lectures we will consider the physical, astrophysical and observational foundations of modern cosmology.

Telescope Observing

Astronomical observations are obtained on large scale international observing facilities. The student will spend a number of nights at an observatory obtaining observations and doing first line data reductions.

Quantum Field Theory

This course provides an introduction to the modern concepts of quantum field theory, formulated in the canonical framework. Special attention is devoted to the explicit calculation of physical observables, like scattering cross-sections and decay widths.

Monte Carlo Techniques

The course is an introduction to solving problems using random numbers. As primary example, the problem of multi-dimensional integration is treated.

Introduction to String Theory

In this course an introduction to string theory will be given. At this moment string theory is the most important candidate for a quantum theory of gravitation and all other interactions, capable of describing not only gravity, but also the strong, weak and electromagnetic interactions as we know them.

Data Analysis

The course will introduce basic statistical principles and approaches for analysis and interpretation of experimental data in physics and other sciences.

CERN Summer Student Programme

The CERN Summer Student Programme offers undergraduate students of physics, computing and engineering a unique opportunity to join in the day-to-day work of research teams participating in experiments at CERN in Geneva, Switzerland. Beyond the outstanding first-class scientific value of their stay, the selected students will find working in a multidisciplinary and multicultural environment an extremely enriching personal experience. It is a once-in-a-lifetime opportunity to make valuable and long-lasting contacts with other students and scientists from all over Europe. Selection is done in several stages. Four positions for the Netherlands are available in the programme for CERN staff to select candidates. Candidates for another four positions are selected by the aforementioned Dutch committee that also ranks the applications.

Student Seminar Particle and Astrophysics

Each class starts with a student giving a seminar on a chosen topic with a duration of 30-45 min. Following the presentation, the other students in the class asks questions and give feedback on the style and contents of the presentation. The instructors may also provide comments

Introduction to C++

C++ has become the lingua franca of modern computer programming, especially where large software projects are involved and efficiency is an issue.

Astroparticle Physics

Astroparticle physics is a quickly growing field, where charged particles (cosmic rays), neutrinos, and very high energy gamma-rays (> 100 GeV) are used to probe the Universe. An overview will be given of the current state of the field.

Introduction to Particle Physics Experiment Analysis

The analysis of data for particle physics experiments is explained from detector concept to interpretation of measurement in the theory. Special emphasis lies on various kinds of simulation, the statistical treatment of the data, fitting techniques, event classification, significance and exclusion limits.

Cosmic Magnetism

Magnetic fields are found on all scales in the Universe: from the Earth's magnetic field to the field of the Sun, stars and entire (groups of) galaxies. We discuss these fields using the framework of magnetohydrodynamics (MHD), a theory that describes magnetic fields in highly-conducting gases. We also show a number of astrophysical applications, and consider the question of the origin of these fields.

Advanced Stellar and Binary evolution

This course covers the advanced stages of evolution of stars, both single and in binary systems.

Nikhef Topical Lectures

These topical lectures typically comprise three full days and need some preparation.

Lie Algebras in Particle Physics

Symmetries and group theoretical methods play an important role in many areas of physics, e.g., when constructing conserved quantities of a given physical system. In this course we discuss the corresponding mathematical background, studying Lie groups, Lie algebras and their representations. The course is aimed at students in both physics and mathematics, and standard for students in mathematical physics.

Asteroseismology

Asteroseismology gives a unique opportunity to study the interior structure and composition of stars through the study of (non-radial) pulsations.

3.3 MAPPING A GENDER DIMENSION IN EXISTING RESEARCH AND CURRICULA – SSH department

The IMR has five multidisciplinary research groups of which one is dedicated to gender research. This research group *Gender and Power in Politics and Management* aims to contribute to a better understanding of the dynamics of power and gender in different contexts, and with this knowledge to help reduce gender inequalities in society. It does not focus exclusively on women but also studies the position of men in society: are all men privileged or just those from higher socioeconomic classes? The group consists of about 25 researchers who perform multi- and interdisciplinary research.³

3.3.1 Research projects

Seven of the project managers were women, 13 were men. 14 other team members were men and six were women.

We divided the research projects into four different categories:

1. Gender as a core theme
2. Gender mentioned
3. Gender potential
4. No gender

In the first category, gender is the main theme of the project. In the second category, gender is mentioned in the project description, but it is not the core theme. In the third category, gender is not mentioned in the project descriptions, however the course

³ <http://www.ru.nl/nsm/imr/our-research/themes/gender-power/>

contains gender-related themes such as power, health, work-life, etcetera. In the fourth category, gender is not part of the project at all. Five of the twenty analysed project descriptions contain gender-related or gender themes. Two of them have gender as a core concept.

The next section contains shortened descriptions of the research projects in the IMR.

3.3.1.1 Gender as a core theme

STAGES

The topic of this project is directly related to gender. The four-year STAGES (Structural Transformations to Achieve Gender Equality in Science) project aims to identify dynamic processes regarding gender equality in research organizations. Besides, the project aims to stimulate organization learning about gender topics. The project is financed by the EU 7th framework program, and contains a co- corporation with different research organizations in Italy, Denmark, Germany and Romania. The project has a duration of 4 years (2012-2016). In the Netherlands, the project covers the following topics: Change in organisation culture, Work-life Balance, Early career development, Discussing gender stereotypes and horizontal segregation, Implementation of a gender dimension in research and methods, Promoting leadership of women in research practices, and Actions to promote leadership of women.

Verankeren van Duurzame Diversiteit in Organisaties (Sustainable Diversity in Organisations)

The topic of this research is directly related to gender, as it focuses on creating more (gender) diverse organizations in the Netherlands. This VENI grant project from the Dutch national science foundation (NWO) conducts a large scale case study research on organizational learning and change towards gender and ethnical diversity. The proposed research builds a theoretical framework on sustainable change towards diversity firstly by combining and contrasting concepts from diversity studies, organizational change theories and studies on organizational learning, and secondly by connecting learning at the individual level of change agents with learning at the organizational level. The main question addressed is how do change agents institutionalize sustainable change towards diversity in organizations? This research analyses the strategies, networks and resources used by change agents at the micro-processual level to develop the capacity of an organization to become a more inclusive organization.

3.3.1.2 Gender mentioned

EUBORDERSCAPES

EUBORDERSCAPES (Bordering, Political Landscapes and Social Arenas: Potentials and Challenges of Evolving Border Concepts in a post-Cold War World) reflects very different ways in which political and social borders condition our understandings of Europe. The research issues centre on the tension between 1) the defining of the borders of Europe and Europeanisation in political and socio-cultural terms, 2) the European inner and external border nexus between liberty and security, 3) the development of cross-border

landscapes and cross-border integration in cases that range from (post)conflicts to harmonious co-existence.

This project will develop several research dimensions. These include one dimension that is gender-related and is described as follows:

The development and consequences of everyday forms of transnationalism, border-transcending, border-negotiating and networking, both within the EU and between the EU and “third countries”. Everyday transnationalism is closely linked to issues of intersectionality (e.g. age, gender, ethnicity and sexuality) as part of the negotiation of borders for work, family, emotional and other reasons. This will also have direct impacts on work, welfare and immigrant rights that could challenge national welfare systems.

However, since this project is part of a very large consortium, we do not know if the participants from the IMR will be involved in the part of the project that is gender-related.

3.3.1.3 Gender potential

Gentrification 2.0

This is not a gender-dedicated project, however it refers to different social, ethnic, and economic compositions, which can be gender-related themes. The project is entitled Practices and policies for neighbourhood improvement: towards ‘Gentrification 2.0’ and is about improving inner-city neighbourhoods characterized by mixed social, ethnic, and economic compositions. Building on assemblage theory, the project adopts a thoroughly interdisciplinary approach to understanding how different social, economic and spatial processes coalesce in shaping neighbourhoods, including their problems and potentials. A core statement is that, despite much criticism, gentrification remains an important strategic concept, which if well elaborated and supported, can infuse new approaches towards neighbourhood development.

Systeemdynamica in de zorg (System dynamics in the care industry)

This is not a gender-dedicated project, however the inclusion of power processes can indicate attention to gender relations. This research explores the role of power by applying social exchange theory to the communication process. According to this theory, differences in power between two actors influence their behaviour; the larger the power differences between the two actors the less likely they are to interact and vice versa. A relatively unexplored area of group model building studies concerns the role of power during discussions, in particular the tendency to sustain hierarchy and exert one’s acquired power during discussions. In general, this behaviour is not helpful in designing optimal solutions.

3.3.1.4 No gender

Tools for Orchestrating Value Chains for Sustainability in New Product Development

The TOV project investigates how sustainability consideration can be mainstreamed in product development processes. It adopts an ecosystem perspective and addresses the entire value network such as suppliers, end users, local communities, NGOs and government bodies. These ecosystems need a more horizontal form of management to achieve a 'fair deal' for all involved. Tools and guidelines will be developed and to evaluate environmental, social and economic aspects and for orchestrating stakeholder relations across the value network. The aims of the project are to contribute a set of tools that are not simple prescriptions but 'handles for reflective practice' in managing sustainability issues during innovation activities.

Breng Kenniscentrum 2013

The aim of the project is to bring together as much knowledge as possible and to join forces in order to optimize the regional public transport and therewith to improve the livability and reachability of the city region.

Climate Proof Cities

The aim of the project is to enhance the adaptive capacity and reduce the vulnerability of the urban system to climate change. Working with various stakeholders, strategies and policy tools are developed for the adaptation of cities and buildings. Research is carried out within the broad context of urban development that is influenced not only by climate change but also by social, environmental and economic developments, and the urban system of governance.

Construction of a Stakeholder

Alliander, a distribution network operator, has the ambition to improve the way they involve stakeholders in their decision making process. At this moment Alliander experiences difficulties implementing this ambition. They find it hard to elicit the goals of stakeholders. As a consequence, stakeholder goals remain unmet. The objective of this research project is to offer the strategy department of Alliander recommendations concerning how to improve the decision making process, by designing and performing a group model building intervention and evaluating the results.

Innovation and Growth, Raising Productivity in Developing Countries

The project aims to identify factors, institutions, and policies that can increase innovation and productivity in low income countries. The project is expected to produce (i) robust research evidence on how to increase innovation so as to raise productivity and to support faster economic growth and job creation. An additional element in the project is (ii) policy development and dissemination from research outcomes in consultation with policy makers in Africa and Asia. Lastly the project includes (iii) capacity development – staff training - of counterparts overseas.

STAR-FLOOD

STAR-FLOOD stands for: “Strengthening and Redesigning European FLOOD risk practices: Towards appropriate and resilient flood risk governance arrangements”. The project is focused on analysing, explaining, evaluating and designing policies to better deal with flood risks from rivers in urban agglomerations across Europe. The results of this ambitious project are expected to be highly relevant for policies and law at the European, national and regional level and for the development of public-private partnerships.

The Governance of Adaptation to Climate Change

The consequences of climate change are starting to become manifest. Adapting the Netherlands to the consequences of climate change is not just a technical issue, but also a demanding matter of governance. The Governance of Adaptation consortium works on knowledge for governance arrangements that can contribute to realizing adaptation options and to increasing the adaptive capacity of society.

Help, a peak?! The use of innovation-based management by medium-sized municipalities

This project aims to provide insights into a locale/regional cluster governance structure prospectively involving civic entrepreneurs, that facilitates linkage of cluster policy development to strategic knowledge and process and produces collectively determined interventions. This will enable municipalities to refine their economic cluster policy.

Keuzevrijheid binnen en tussen pensioenfondsen (Freedom of choice within and between pension funds)

The aim of the project is to study the economic and political aspects of the introduction of more freedom of choice for participants and employers in the Dutch pension system. The research question is: How can freedom of choice and collectively organised solidarity be combined? This question will be answered by studying: a) the individual opinions of employers and employees in the Netherlands, b) the experiences with freedom of choice of a number of European countries with similar collective supplementary pension systems.

Cross-border shopping practices and historical representations of the other side: analysing feelings of unfamiliarity along the Dutch-German border in the 19th and 20th century

The aim of this project is to trace the effects of changing historical representations of rational and emotional push, pull, keep and repel factors on leisure activities in general and shopping practices in particular, along the Dutch-German, German-Polish and eastern Polish borders. The project will not only contribute to a better understanding of processes of integration and fragmentation in border regions, but also provide further insights in the interplay between contemporary practices (mainly in a spatial-geographical sense) and historically grounded representations (especially in the socio-psychological sense).

Food for thought and thought for food, the local-global entanglement of the slow food movement

Today, local and global forms of social interaction are intertwined in increasingly complex ways and it is this interaction which enables 'local' practices as well as global modes of governance. This applies in particular to social movements that face the challenge to reconcile the needs for 'grassroots' creativity, flexibility and alternativity with the drive for stronger ideational and organisational coherence worldwide. This project will develop and apply a semiotic network approach to assess the recent evolution of the slow-food movement addressing this core question. The approach draws from recent advances in network analysis, content analysis and computer aided multi-site ethnography.

Future Value Chains of Architectural Services

This research aims to outline new roles of architects and to develop governance models for architectural services in the value networks between architectural firms, their clients and other stakeholders in the field. Disciplinary approaches from architecture and construction management are integrated with theoretical approaches from business administration. The contribution of this research is 1) a more systematic analysis of institutional forces based on the concept of the organisational field, and 2) the development and testing of possible governance models for the architectural field.

Grounding Land Governance

This research programme investigates how land governance evolves in post-conflict situations, as an outcome of the interaction between multiple stakeholders, including government, traditional authorities, NGOs, and local people. Thereby, it looks in particular at how decentralization influences relations of governance, how it impacts the legitimacy and authority of local land tenure institutions, and how it affects the resolution of land conflicts. It builds around comparative analysis of case studies from Uganda, Burundi and South Sudan.

Public Negotiations

This research project aims to study differences between public servants and private sector employees in negotiations both in terms of process and outcomes, in order to develop a theory on public sector negotiations and to design a teaching module for Public Administration students. The main research question is: What are the differences between negotiations by public servants versus private sector employees, in terms of negotiation skills and strategies (process) as well as outcomes?

Parkagent

This project aims at developing Parkagent, an innovative parking model that can simulate the behaviour of thousands of individual car drivers at the same time. The simulation model can calculate the effects of changes in parking policies and provide governments, project developers, and private parking operators with crucial information.

3.3.2 Curricula

In 2013, there were 31 MSc specializations in the IMR. Of the 99 reported MSc courses in this report, 59 were mandatory courses and 40 electives (see Table 4). 15 of the 99 courses were lectured in Dutch.

Table 6 shows that there are fewer women lecturers than men lecturers in the IMR, for both the BSc and MSc programmes. Looking at the courses that full professors teach, women full professors more often teach elective courses than mandatory courses. Women assistant professors more often teach mandatory courses than elective courses. Of the 99 MSc courses analysed, 23 courses had a woman course coordinator (23%, see Table 4). Also, there are fewer women than men students in all MSc programmes (see Table 7). Eight of the gender-related courses have a woman course coordinator, 13 of the gender-related courses have a man course coordinator.

Table 6: Nr. of mandatory and elective courses taught (both BSc and MSc)

Nr of mandatory courses taught	Men	Women	Total	% Women	Nr of elective courses-taught	Men	Women	Total	% Women
Full professors *	22	8	30	27	Full professors *	15	8	23	35
Associate professors	23	4	27	15	Associate professors	18	3	21	14
Assistant professors	26	18	44	41	Assistant professors	27	11	38	29
Assistants **	19	7	26	27	Assistants **	11	2	13	15
External Assistants **	7	2	9	22	PhD students	3	2	5	40
PhD students	2	6	8	75	Other	1	2	3	67
Other	2	3	5	60	Total	75	28	103	27
Total	101	48	149	32					

* This category includes professors by special appointment

** With assistant is meant teacher (docent) according to the Dutch system

Table 7: Nr of students enrolled in MSc programmes IMR 2013/2014

MSc Programme	Total nr. of students	% female students
Public Administration	118	43%
Business Administration	354	45%
Economics	147	33%
Human Geography	170	44%
Environmental Sciences	19	47%
Planning	120	40%
Political Science	78	28%

In Table 4 we only report the sex of the course coordinator, as the number of courses is too large to analyse the sex of all lecturers and the sex of the lecturers has to be searched online manually.

21 of the MSc courses mention gender or gender-related concepts in their content description (21%), of which 11 were elective courses. The next section contains shortened descriptions (some translated from Dutch into English) of the courses that are gender-related. In Table 4, the other courses are also listed. We divided the gender-related courses into four different categories of courses:

1. Gender as a core theme
2. Gender mentioned
3. Gender potential
4. No gender (these are listed in Table 4)

In the first category, gender is the main theme of the course. In the second category, gender is mentioned in the course description, but it is not the core theme. In the third category, gender is not mentioned in the course descriptions, however the course contains gender-related themes such as power, health, work-life, etcetera. In the fourth category, gender is not part of the course at all.

The next section contains shortened descriptions of the MSc courses in the IMR.

3.3.2.1 Gender as a core theme

Gender and Diversity in Organizations

This is a mandatory course for the students in the MSc specialization Strategic Human Resource Management. This course reflects the fact that much diversity research today is inspired by theoretical and empirical studies on gender in organizations. Within management and business studies, the attention for questions that pertain to the composition and qualities of the workforce has grown. Managing diversity is a hot topic for many organizations that are confronted with a workforce that is becoming increasingly heterogeneous due to factors such as migration, emancipation, ageing and international cooperation. Coping with the differences between men and women, older and younger colleagues, and people from different cultural backgrounds and educational backgrounds has become an issue for employees and managers in modern organizations. To attract and retain a diverse workforce is one of the key challenges facing modern human resource managers and general managers. One of the books students have to read for this course is: Kirton, G. & Greene A. (2010). *The dynamics of managing diversity. A critical approach*. 3rd Edition. Oxford: Butterworth-Heinemann.

Gender Theories and Equality Policies

This is an elective course. The course starts with presenting different visions on gender and gender equality across Europe by discussing different feminist positions and their accompanying political strategies to achieve gender equality. The particular organization of labour, intimacy and citizenship in different settings will be studied to understand the

(re)production of gender inequality. We will also study how gender is related to other structural inequalities (multiple discrimination; intersectionality). We will particularly give attention to the strategy of gender mainstreaming by way of exploring how the EU deals with achieving their aims to combat discrimination and promote equal treatment. Secondly, we will introduce the perspective of Critical Frame Analysis to study the construction of gender related issues as a policy problem and the presented solution. We will also explore who has a voice (actors like the state, social movements or experts) in framing gender issues in the political arena. Using this framework, we will look into the normative question of when society will be gender just.

3.3.2.2 Gender mentioned

Forms of Responsible Organizing

Organizations are increasingly expected to act in a responsible manner, both in their contributions to society (their products, services and possible side-effects of the production thereof) and in their contributions to the development and behaviours of organization members (their capacity for learning on the job, professionalization, moral behaviour). This course aims to present students with an organizational design and development perspective on this topic and aims to encourage students to independently develop a critical perspective on theories on and practices of responsible organizing. Students can then sign up for one of four parallel tracks in which they will be working on their papers. One of the tracks is called 'Learning by organizations, teams, and women'. Therefore, there is explicit attention in this course to women in organizations. One of the prescribed readings for this track has a gender-related theme: Eby et al. (2005). Work and family research in IO/OB: content analysis and review of the literature (1980-2002). *Journal of Vocational Behavior*, 66(1), 124-197.

Group Model Building II

GMB II focuses on messy problems with social conflict and the role of power in such conflicts.

After having finished this course, students know why and how Group Model Building (GMB) is used in messy problems with social conflict in which power differences play a role. This is not a gender-dedicated course, however the focus on power differences might signify a relation to gender issues. As one of the guest lecturers in this course is one of the department's gender experts, we asked her for some more information and the course manual. Her guest lecture focuses entirely on gender and is titled: "The role of GMB in power and conflict, the case of gender". The lecturer uses example from her experience in practice and her research provides students with projects on gender. However gender is not the main theme of this course and would be removed from the course entirely when the guest lecture on gender would be cancelled.

Contemporary Debates in Political Theory

This course offers a thorough overview of the depth and breadth of the discipline presented in the form of debates between thinkers and their perspectives. The current research agenda of political theorists across the globe determines the choice of topics - with at least one topic to be freely, but collectively, chosen by the students. Previous debates were animal advocacy (rights, welfare and capabilities); justice from the

perspective of socio-biology; cosmopolitanism; the misfit between justice and democracy; true evil (from Robespierre to Dutroux); how to democratically constitute a 'people' without circular reasoning; 'hoes & bitches' versus 'power girls'; justice for future generations; religion, anti-religion and a-religious thought; Schmitt, Mouffe and agonism, etc. This is not a gender-dedicated course, however there have been explicit attention in this course to women ('hoes & bitches' versus 'power girls'). The content of the course is subject to change, but gives room for gender(-related) topics every year.

The Politics of Reform

This seminar focuses on the reform processes surrounding state initiated policies addressing inequalities in the affluent, democratic countries of the OECD and the broader European context. Historically, one of the core functions of social policy has been to reduce economic inequalities by insuring citizens/workers against the risks of old age, sickness, disability and unemployment. Early social policies were premised on the so-called 'male breadwinner model' and the absence of large-scale immigration. Over time, state initiated policies addressing inequalities in general and social policies in particular have expanded to encompass gender equality, the integration of immigrants and sexual equality. In this course, we will analyse the ways that social policies designed to provide protection against classic social risks or inequalities have been expanded and/or reinterpreted to take into account not only gender, but also 'new' social risks such as combining work and family. The course aims to study the politics of reform across social policies targeting different inequalities and sets out to learn from the best comparative work available on welfare state reform, gender equality reform, migration and integration reform and sexual equality reform in the European context mainly.

This course pays a lot of attention to gender equality and related issues and policies.

Multiculturalism, Diversity and Space

Contemporary societies are bound together but also divided along lines of ethnicity, gender, age, class, and sexual orientation. The course focuses on issues of recognition, identity, citizenship, integration and participation that are relevant to immigrant, gender and age groups, and ethnic and sexual minorities. In order to understand how multiculturalism and diversity are perceived and lived, the course is inspired by various theoretical perspectives which help us understand how markets, politics and institutions are connected to the inclusion and exclusion of specific social groups at the level of states, cities and neighbourhoods. Using these perspectives, you will be able to explain why citizenship rights are stratified on the state level, and what this means for access to resources and services on the local levels. The course also draws inspiration from empirical work in the field of multiculturalism and diversity. Human geography journals publish regularly on issues of immigrant integration, ethnic entrepreneurship, women and livelihoods, place and ageing, the meaning of home and belonging for queers, and so forth.

This course pays a lot of attention to gender, diversity, and inclusion.

3.3.2.3 Gender potential

Human Resource Management and the Flexible Workforce

In this course, the focus is on activating labour market policies and organizational policies that are introduced to increase labour market participation and mobility, and the recruitment and motivation of diverse worker categories, as well as the interlinkages between policies designed at the various levels. The central themes in the module can be viewed from various theoretical perspectives (such as institutional theory), and relate to the research interests of the lecturer. These interests include the promotion, adoption, implementation and use of flexible work arrangements, such as flexitime, tele-home-working, New Ways to Work, part-time work or other work-family arrangements. The content refers to diverse workers. Taking into account the interests of the lecturer, the course possibly includes gender diversity.

High Performance Work Systems

This course focuses on high performance work systems. The much-debated relationship between HRM and Performance has occasionally moved beyond universal best practice, and academics tend to use a best system approach. However, this issue is not yet decided and it is unclear what this means and implies. At the same time, practitioners are uncertain about how to configure HRM in their companies. The main question is: what constitutes the synergy between policies and practices? What is the 'fit'? In this course we focus on the effects that bundles of policies (such as control and commitment policies) and practices (such as flexible rewards, profit sharing, participation in decision making, information sharing and work-life arrangements) have on various HR outcomes and on organizational performance. This is not a gender-dedicated course, however within the practices that are discussed a gender-related theme can be found.

Organizational Change

This course elaborates on the relationships between planned change programs, on their unintended side effects and on the continuous processes of emergent change. Therefore, this course focuses less on the explicit design and application of various strategies and methods of organizational change, and more on the social practices involved in organization design and organizational change. In particular, the course emphasizes the social dimension of interventions - such as resistance, acceptance and appropriation of organizational redesign - but also acknowledges and discusses power processes in organizational change. This is not a gender-dedicated course, however the inclusion of power processes can indicate attention to gender relations.

Research Traditions in Public Administration

What type of knowledge is scientific knowledge and how does it differ from other types of knowledge? Can scientific knowledge be relevant for policy making and public administration, and if so, how exactly can it be of relevance? Is rational deliberation about values and aims (political or otherwise) possible, or is this an area of mere taste and preference, or of power and manipulation? What is the role of experts or scholars in Public Administration? Do they have any particular responsibilities? If so, what are these

responsibilities and why these? These are the types of questions that are central to this course. To answer them we have to turn to Philosophy of Science, Ethics and Methodology. This is not a gender-dedicated course, however the inclusion of power in the course indicates a possible gender-related theme.

Current Issues in Globalization

In this course, globalization is used as a common framework for providing you with an in-depth understanding of numerous issues within international economics. These issues are typically linked to other disciplines, so that you can become aware of non-economic factors that are relevant for studying social-economic phenomena. Specifically, the course comprises the following themes: Globalization and the welfare state, Globalization and the fairness of trade, Globalization, inequality and human development. The last theme looks at the poorest countries and groups, as they can benefit least from the opportunities offered by globalization, implying that inequalities both within and between countries have increased considerably in recent decades. The Human Development (HD) approach is concerned about this negative side-effect of globalization, emphasizing that development is ultimately about people. This theme focuses on inequalities within and among developing countries, examining papers that are related to the three central pillars of the HD approach: education, health and enjoying a decent standard of living. This is not a gender-dedicated course, however the course has a theme related to inequalities and looks at poor groups, education, and health, which are possibly gender-related.

Changes in World Politics: The Rise of the BRIC Countries

In this course, we will address the BRIC phenomenon from several perspectives. To get an insight into the BRIC's potentials and challenges, the course focuses on four broadly defined issue areas: security & defense, human rights & democracy, economy & development, and welfare & environment. Within these issue areas, the course addresses the role of national governments and bureaucracies, political parties, corporate actors, civil society organizations, and indigenous communities as well as the impact of and for trans- and international actors. Throughout the course, we will use IR and IPE theories as well as postcolonial and critical approaches in order to explain the making and shaping of BRICs. This is not a gender-dedicated course, however the approaches used in the course as well as the issue areas are possibly gender-related.

Urban Networks, Accessibility and Mobility

The benefits from increased vehicle traffic volumes and speeds are recognized, but reductions in walkability and land use accessibility are often overlooked. Such planning practices can result in decisions that increase mobility but reduce overall accessibility (for example, by reducing travel options and stimulating sprawl), and tend to undervalue other accessibility improvement options (such as more accessible land use development, and mobility substitutes such as telework). More comprehensive analysis can help decision-makers identify more optimal solutions. There is no single way to evaluate accessibility. Different planning issues require different methods to account for different

users, modes, scales and perspectives. For example, neighbourhood planning requires more walkability analysis, while regional planning requires more analysis of automobile, bus and rail travel. Evaluating access for lower-income populations differs from that of wealthier and business travellers. This course provides guidance for applying various types of accessibility analysis in transport planning. This is not a gender-dedicated course, however mobility, telework, and lower-income populations indicate possible gender-related themes.

Global Political Economy

This course focuses on the political dimensions of global economic power relations. This course seeks to explain why global economic relations are structured the way they are, and to uncover the political content of the changing nature of state-market relations in the context of post-War capitalism, and the emerging neo-liberal world order. The course centres on the dynamic interplay of agents and their interests in shaping and contesting the nature of global political economy power relations, as well as the underlying material and institutional structures enabling or hindering them. As a focal point of discussion, the global distribution of wealth and power that results from the economic interdependencies spanning the globe are addressed. Besides identifying important agents that transform the current system and their institutional strongholds, both internationally and domestically, the important question of *cui bono*, i.e. who are the winners and losers of the current system, are posed. This is not a gender-dedicated course, however the focus on the distribution of wealth and power indicates that this course includes a gender-related theme.

Power in Political Theory

In this course, power, the mother of all political concepts, receives our full and well-earned attention; it is a concept that is too easily taken for granted or ignored by political scientists, political theorists and politicians. The course opens with the discovery that authority and autonomy are mutually exclusive. Next, we discuss a representative selection of answers to the anarchist challenge - answers that turn out to be only halfway successful, at best in legitimizing the use, or threatened use, of force or power. The Anglo-Saxon tradition seems to be inspired by a desire for liberal tolerance, a desire to protect and make room for, a diversity of individuals and of views on the good life. Sooner or later, however, ideas of the good life contradict one another, and one idea has to give way to the other, either under political pressure or through 'reasonable' argument. Using the three conceptions of power of Steven Lukes, combined with Foucault's notion of discursive power, we re-examine the problem of the incompatibility of power and morality. This is not a gender-dedicated course, however the focus on power indicates that this course includes a gender-related theme.

Recognition, Redistribution and Citizenship

The subject of this course is the relationship - or tension - between recognition, redistribution and citizenship. The recognition-theoretic approach is a different, alternative approach to social justice. The debate between Axel Honneth and Nancy

Fraser clearly brings out the contrast between the two. Honneth argues that 'recognition' is the fundamental moral category and that redistribution should be seen as derivative. Fraser, on the other hand, denies that questions of redistribution can be translated into recognition; that is why she defends a dualistic framework in which the two categories are interpreted as dimensions of justice that cannot be reduced to each other. Currently, the emphasis in this whole debate is on what citizens can rightly expect or demand: whether this is being put in terms of 'recognition' or 'redistribution.' The question this raises is: what kind of institutions and practices can play a cultivating role in this regard, such as education, political participation and the city? This is not a gender-dedicated course, however important role Nancy Fraser plays in this course indicates gender-sensitivity of the topic.

Theoretical Approaches to Comparative Politics: Actors & Institutions

Comparative politics has a rich theoretical, comparative, and empirical tradition. This course addresses the core theoretical debates in the discipline. It focuses on rational choice, the analysis of culture (survey oriented, hermeneutical and post modern), and it examines structural approaches, covering neo-institutional, historical institutional, and collective action models. These theoretical tools are then used to examine the core concepts of comparative politics. Topics covered will consist of the rise of the modern state (neo-Marxist, liberal, institutional), concepts of power, pluralism, elite theory, civil society, social movements and nationalism. This is not a gender-dedicated course, however the inclusion of power in the course indicates a possible gender-related theme.

Globalising Cities & Hinterlands

Globalization has a great impact on the physical structure and social-economic fabric of cities all over the world. Approaching globalizing cities from the perspective of development geography means that much attention will be paid to socio-economic inequalities in cities, in both the North and South. In a different manner, globalization also impacts local structures and processes in rural regions, resulting in adaptations of existing social, economic and political structures, or the creation of new ones, which often traverse the geographical boundaries of local villages and regions. With regard to urban issues, development geography focuses on the position of marginal groups in society and their opportunities for emancipation. However, these same concepts can also be applied to rural contexts, given the rising inequalities between and within rural regions. Therefore, in this course special attention will be paid to processes of social exclusion, coping strategies and participatory policies which could lead to more equality. Special attention will also be given to the role of the informal sector in low-income countries. This is not a gender-dedicated course, however the course focuses on marginal societal groups and social exclusion, which are possibly gender-related.

International Migration, Globalization & Development

Migration, as one component of globalization, is increasingly recognized as being an important influence on local, national and global economies, both directly and indirectly. Recent attention to the scope of remittances sent by migrants to their countries of

origin (which in many countries has surpassed official development aid) has resulted in much interest from politicians, IGOs and NGOs, all keen to tap into the potential of these remittances, and the migrants themselves, for local development. At the same time migration is also looked upon as largely problematic, notably in countries that are largely recipients of migrants, albeit that similar perspectives can also be found in the so-called transit countries, and even in countries that have balanced in- and outflows of migrants. Understanding, and situating, migration within larger globalization processes, including their developmental impact, is therefore the main focus of this course. This course explores the role of South-North migration for development, not only in the global South but also the North. This is not a gender-dedicated course, however migration can be a gender-related theme.

Urban and Cultural Geography

Cities are the vibrant and dynamic focal points of our society. These diverse agglomerations of people, companies and organizations are locations for both innovation and conflict. Cities are regarded as creative places for creative people as well as conflictual places for divergent communities. Following the recent cultural turn in urban studies, which focuses on meaning, identity and the politics of difference, this course aims to provide you with a basis for understanding the main contemporary urban issues by looking at diversity in the city. In addition, we will analyse and critically evaluate the development of these aspects of urban life. The primary aim of this course is to develop students' critical understanding of the complex processes of urbanization. This involves analysing cultural, economic, political and social change in cities. This is not a gender-dedicated course, however identity, difference, and city life can be gender-related themes.

3.4 COMPARISON BETWEEN SSH AND STEM DEPARTMENTS

3.4.1 Staff composition

Within the STEM department IMAPP there is a lack of women lecturers; only one woman lectured in a MSc course in the academic year 2013/2014. The IMAPP board would like to increase the number of women staff in general, but also increase the number of women lecturers so they can be role models for (women) students. Within the SSH department IMR the staff composition is more balanced. About a third of the courses in the BSc and MSc programmes are taught by women (see Table 6). 23% of the MSc course coordinators are women (see Table 4). Among the IMR staff there are gender experts which is reflected in research and curricula; gender is a core theme in MSc courses and research projects. A number of researchers from the IMR are affiliated to the university's overarching multidisciplinary Gender Institute, in contrast to no researchers from the IMAPP.

3.4.2 Research projects

Looking at the research projects running in the year 2013, we found no gender-related projects in the IMAPP. In the IMR five of the twenty analysed project descriptions contain gender-related or gender themes (25%). Two of them have gender as a core concept. We divided the IMR research projects into four different categories: 1) Gender as a core theme (10%), 2) Gender mentioned (5%), 3) Gender potential (10%), and 4) No gender (75%).

The IMAPP had more externally funded projects of 200.000 Euros or more in 2013 than the IMR (36 vs 20). Three of the IMAPP projects exceeded one million Euros, whereas no project in the IMR exceeded one million Euros. In the IMAPP, three of the project managers of the analysed projects were women (14%). In the IMR seven of the project managers were women (35%).

3.4.3 Curricula

Looking at the MSc courses of the 2013/2014 academic year, we found no gender-related courses in the IMAPP. In the IMR 21 of the 99 courses were gender-related (21%). Most of the gender-related courses in the IMR were found in the departments Business Administration (6 courses), Political Science (6 courses), and Human Geography (4 courses). Two of the courses have gender as a core concept. We divided the IMR MSc courses into four different categories: 1) Gender as a core theme (2%), 2) Gender mentioned (5%), 3) Gender potential (14%), and 4) No gender (79%).

It seems more obvious for a Management school to include gender in the curriculum as the field centers on the governance structures, management and performance of public and private organizations. However, we did see some potential for the IMAPP too, to include gender in their curriculum. Even though it is not referred to in the content description, some of the IMAPP courses could include a gender dimension. The content of the IMAPP course *Nuclear Physics* includes biological effects of radiation, and nuclear medicine (CT-scan, PET-scan, MRI-scan, Radiotherapy). This theme involves effects on human beings as well as medical tests that involve human beings. Therefore, we see the potential to include sex differences into the course.

The IMAPP course *Professional Preparation*, which prepares for the transition from being a student to physicist or astronomer on the job, could benefit from gender awareness of for example gender stereotypes in recruitment and selection procedures.

Finally, the *CERN Summer Student Programme* offers undergraduate students of physics, computing and engineering a unique opportunity to join in the day-to-day work of research teams participating in experiments at CERN in Geneva, Switzerland. Selection is done in several stages by a committee. The selection process could perhaps become more gender equal when selection committee members are gender aware. Also, lectures should be aware to encourage men and women students to the same extent to apply for the programme.

3.5 CONCLUSION

Within the IMAPP, no reference to gender or Gender studies can be found in research and curricula. However, in the future gender might get incorporated in the IMAPP's research more, as in Horizon 2020 gender is a cross-cutting issue and is mainstreamed in each of the different parts of the Work Programme. According to Horizon 2020, integrating the gender dimension in research and innovation (R&I) content, helps improve the scientific quality and societal relevance of the produced knowledge, technology and/or innovation.⁴ This might lead the IMAPP to get more involved with gender as a theme in their research projects. There is no gender expertise among the staff of the IMAPP. However, there is some potential in the curriculum to include gender themes, particularly in the preparation for the profession.

Within the IMR, the number of courses and research projects with gender as the core theme or gender-related themes are quite substantial. 21% of the MSc courses have a gender-related theme integrated in their course, which can be considered exceptional for a management faculty. This can be partly explained by the number of gender experts among staff and the research group *Gender and Power in Politics and Management*. Nevertheless, there is more potential to include gender in research projects and the curriculum than is currently used. This is shown by the number of courses and projects that do not mention gender in their descriptions, but contain gender-related themes. Here too, we can expect an incentive from the Horizon 2020 funding program of the EU.

⁴ <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/promoting-gender-equality-research-and-innovation>