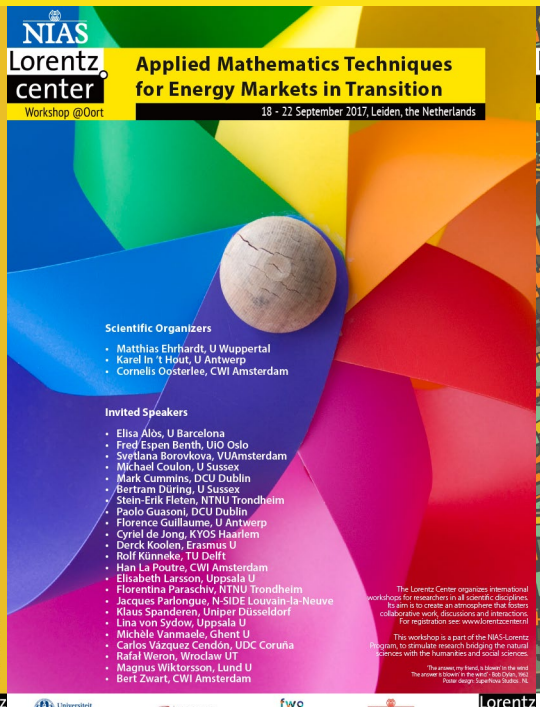
Lorentz center

Lorentz Center
Annual Report
2016-2017



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FROM THE DIRECTOR

In 2015, the Lorentz Center announced a next phase in its evolution. Stimulated by a direct investment of the Executive Board – *het College van Bestuur* – of Leiden University, we started a significant expansion of our scientific spectrum into the social sciences and humanities. We gave ourselves a period of two years to find out whether such an expansion could be successful – unlike in the sciences, workshops in the social sciences and humanities organized by the Lorentz Center are quite new to the international communities in these fields: making this expansion work was expected to be a challenging task. So – although it is a coincidence – it is quite appropriate that we also decided to rejuvenate the set-up of our annual report and to combine the reports of two years – 2016 and 2017 – in this new setting: it gives me the opportunity to look back on the full two years since the start of the extended activities in the social sciences and humanities.

I am very happy – and in fact proud – to say without any reservation that our initiative to structurally increase our program in the social sciences and humanities worked out even better than we hoped for at its beginning in 2015. In the past two years we have been able to organize a rapidly increasing number of beautiful workshops in fields that were absolutely new to the Lorentz Center, such as Egyptology and architecture. Perhaps more importantly, the inflow of proposals in these areas has grown steadily and has obtained an unexpectedly high and stable level. The Lorentz Center is very grateful to the Leiden University Faculties of Social Sciences, Humanities and Law, and – again – its Executive Board: together they not only have enabled this development, but also immediately set out to sustain it in the long run.

From a point of view of only a couple of years ago, it is absolutely surprising that I can now say, at the very end of 2017, that the Lorentz Center has reached the remarkable scale at which it can organize the maximal number of 85-90 workshops per year – for the upcoming years. Perhaps even more remarkable is that 25-30 of these workshops will have their focus in the humanities and social sciences – although that is a somewhat relative statement, because the majority of these workshops is expected to have a strong overlap with themes in the sciences. And that is perhaps the very best aspect of our expansion: building bridges between scientists, communities and disciplines is our core business, and it is truly inspiring to observe that this has also been significantly strengthened in the last couple of years.

Of course, it should not be forgotten that the foundation of the program of the Lorentz Center lies in the sciences, it has been like this in the past and it will – must – remain so in the future. It is crucial to the Lorentz Center – and the communities it serves – that its expansion into new areas did not – and will not – jeopardize its activities in the sciences: in the upcoming years we will also be able to organize 55-60 workshops in the sciences – the level of the last years, or even slightly above that.

Moreover, I am proud to mention here that in the years of 2016-2017, the Lorentz Center organized the massive number of 157 high-quality workshops (see appendix 1), with a similarly overwhelming and above all inspiring richness in scientific topics – as you can read in this report.

I am writing this introduction while visiting our friends and colleagues of the Tohoku Forum for Creativity (TFC) in Sendai, Japan – also mentioned later in this report. Yesterday, I was part of a discussion about what the TFC has learned and still can learn from the Lorentz Center, and it was expressed unanimously by all people present – among which several organizers of Lorentz Center workshops – that the most important aspect of the Lorentz Center was the quality, the kindness and the warm hospitality of the Lorentz Center team. Of course, I absolutely agree, but there is more: 2016-2017 were exciting years at the Lorentz Center, it is the flexibility, energy and dedication of the team that made all this possible.

Arjen Doelman
Director Lorentz Center

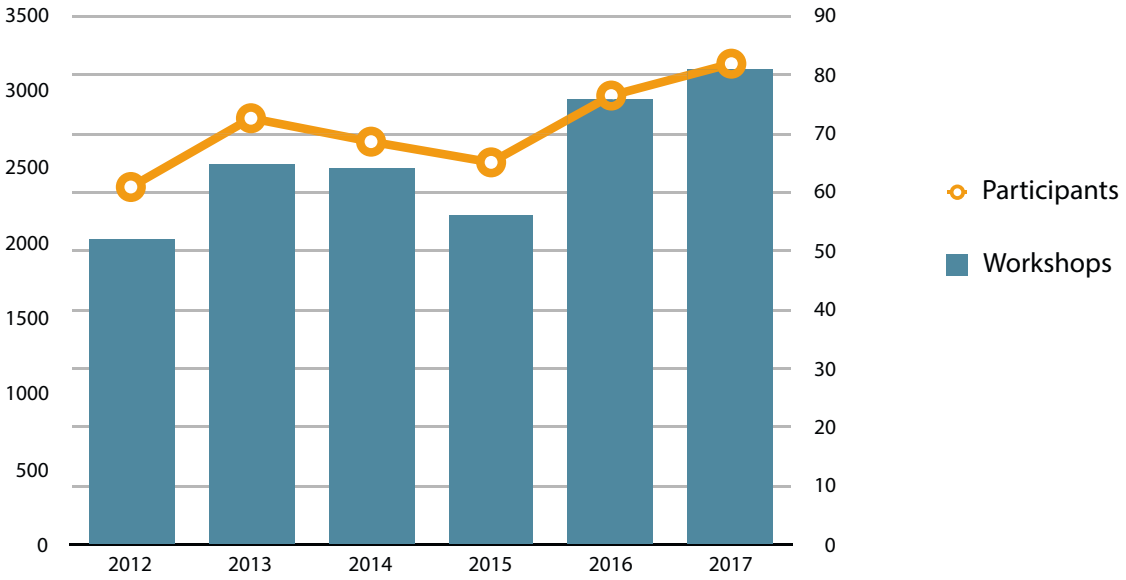
December 2017

CONTENTS

1.

PEOPLE

The Lorentz Center is an institute in the Netherlands organizing international workshops in all scientific disciplines and for everyone who is active in research, at all levels and in all fields. Lorentz Center workshops focus on new collaborations and on interactions in highly diverse groups of researchers. We endorse diversity of scientific viewpoints, geographic origin as well as seniority, gender and culture.



The figure shows steady growth since the opening of our 2nd venue in the Snellius building in 2012. In 2015 we temporarily planned less workshops, because of uncertainty about future funding. Since 2016 the growth is continuing, reaching the maximum capacity with almost 90 workshops (see appendix 1.

In the following section, our most important stakeholders introduce themselves and talk about the 'magic' of science and the Lorentz Center.

a. The employee

The Lorentz Center team is led by the director, supported by an institute manager, a scientific manager and a public relations coordinator. The scientific planning team assists the work of our advisory boards and supports the organizers with the development of new workshops. The team of workshop coordinators helps the organizers with all organizational aspects.

The director, Arjen Doelman is active as professor of mathematics, and both the institute manager and the scientific manager have a PhD in science, so they have first-hand experience with the passion of doing research. The fact that we are embedded in the Faculty of Science of Leiden University helps us in running a relatively large operation with a small dedicated team.

Henriette Jensenius, Scientific manager

The support and advice we offer in the early steps of the process is quite special and I believe that it plays an important role in the preparation and submission of proposals and the outcomes of the workshops.

Even before my studies, I had a rather fuzzy, but vivid sense that wonderful things could happen if the skills and passions of different experts, far away from each other in different bubbles, could be brought together. Thus, I find myself in the wondrous position of every day facilitating bits of a romantic dream of my youth.'

b. The advisory board member

The Lorentz Center strives to host innovative and timely workshops of high scientific quality, our advisory boards play a key role in this. The opinion of the boards is decisive in issues involving scientific content and is leading in the scientific policies of the Lorentz Center.

Currently, the Lorentz Center has eight scientific advisory boards: Astronomy, Chemistry, Computational Science, Informatics, Life and Medical Sciences, Mathematics, Physics and Social Sciences and Humanities (NIAS-Lorentz program). See Appendix 2.

Martha Merrow

Martha Merrow is an American chronobiologist, a full professor and currently chair of the Institute of Medical Psychology at the Ludwig Maximilians University in Munich. Her career focuses primarily on investigating the molecular and genetic mechanisms of the circadian clock. She served as a member and chair of our Life Sciences Board for 10 years.

At the end of 2016, I retired from the Life Sciences Board of the Lorentz Center. I had been a regular member, with Roel van Driel as our Chairman, since 2006 (the first LS Board). I took over from Roel when he retired from active work in 2012. I was still a tenure track professor when I joined and to be called to serve with this particular group of stellar colleagues was truly a privilege. It felt like I had won the lottery! I - ruthlessly - used this committee to build my national and International network. I still am regularly in touch with many colleagues that I interacted with during this time. My Lorentz Center experience is a good example for young academics on how useful science management work can be.

I 'worked' with the professionals at the Lorentz Center. Work? Odd word choice since my involvement could hardly be called work. When I needed to recruit new members of the Board, I could honestly say that the tasks were tremendously streamlined by the remarkable, professional staff of scientist-administrators that support us in the Lorentz Center. The only thing we had to do was read a pile of short proposals and make a priority list with a justification. These days, imagine just being able to think about and reflect on scientific ideas! That's the Lorentz Center Board experience!

I saw change and progress. On the content side, the Life Sciences Board expanded to become Life and Medical Sciences. This was overdue since so much of Life Sciences research is intimately tied to medical research. Roberta Croce chairs the current LMS Board, which is an exciting collection of extremely diverse scientists.

I guess that those of you reading this already know this, but it has to be said: there is something about the Lorentz Center that is unique and wonderful. I have been to my share of meetings over the years, big and small, but there is no place or format where discussions flow so readily and pleasantly as at the Lorentz Center. The formula of a professional staff and financial support combined with a program mixed between seclusion and urban life is a winning one. If I think about what is wrong with academia, I think of the loss of the ivory tower, the loss of time to think, reflect, discuss and develop. These things are all possible – no, expected - at the Lorentz Center when you attend a workshop.

c. The workshop organizer

Any researcher or group of researchers can apply for organizing a workshop at the Lorentz Center. The scientific organization of the workshop is left to the scientific organizers, while the staff of the Lorentz Center takes care of the practical organization. We are pleased to see that many researchers often come back to the Lorentz Center to organize a workshop again.

Tony Donné, TU Eindhoven

One of the challenges in fusion research is to find a suitable solution for the heat exhaust of the reactor, as materials are exposed to power fluxes similar to those at the sun's surface. Research at present concentrates on different geometries for the exhaust that spreads the power over a larger surface, as well as on developing new materials. When we discussed in 2015 within EUROfusion, the European consortium on fusion research, how to move forward, I proposed the idea to organise a dedicated workshop at the Lorentz Center. I had in mind that a number of earlier workshops we had organised on different topics were highly successful.

Together with a number of colleagues we wrote a proposal for a workshop entitled 'Taming the Flame' that took place about a year later. The aim of the workshop was to bring together experts from many different countries to discuss the status of the various approaches and to develop strategies for the future. I speak on behalf of my co-organisers when I express that the workshop was, especially thanks to the enormous and professional help of the team from the Lorentz Center, a great success. The workshop included many discussion and break-out sessions and it was inspiring to see that the scientists were even 'spamming' each other's mailboxes during the night with ideas they had worked out in their hotel rooms. The workshop quickly led to a number of peer-reviewed papers. Future research directions developed in Leiden are now at the basis of the new European fusion research roadmap in the field of plasma exhaust.

As member and, later, chair of the Physics Board, I always felt privileged as it gave me, via the many workshop proposals, an excellent overview of the state-of-the-art of Dutch physics. But not only that: it also allowed me to look over the borders of physics into other disciplines. Over the years I had many interesting encounters with other scientists, from which I learned a lot. At the same time, the very professional and competent staff of the Lorentz Center kept the workload on my shoulders to a manageable level.

d. The prize winner

Together with our partners (see page 15) we annually organize calls for applications in specific fields. Our prize winners, often introducing new disciplines and groups of researchers, are awarded with organizing a special Lorentz Center workshop.

One of the annual awards is the Distinguished Lorentz Fellow (DLF) call, as part of the NIAS-Lorentz program (see page 15). The winner, selected by leaders of the Dutch Scientific Community, is a well-established researcher proposing a subject that bridges the humanities and/or social sciences with the natural and/or technological sciences.

Patricia Osseweijer

Patricia Osseweijer is full professor and leader of 'Section Biotechnology and Society'. Her drive is to link technological innovation in biobased production with societal challenges to build a sustainable bioeconomy. In 2015 Patricia was awarded the Distinguished Lorentz fellowship for integrating social sciences and technology. As part of the fellowship prize she organized the Lorentz Center workshop on Bridging Technological and Social Innovation for a Biobased Economy.

In January 2016 the Lorentz Center welcomed 29 international experts from different disciplines to define key leverage actions to improve sustainable development. As organizer I was delighted to get so many top experts from different disciplines together. They all shared my concern about poverty and climate change and were willing to discuss how biobased solutions could contribute to a better world. The atmosphere was great, we were challenging each other about world visions, transitions and technical innovation. During the week we had organized a boat trip with journalists, policy makers and other key stakeholders. The relaxed atmosphere contributed to a balanced exchange about biobased economy and helped to get the importance of our work across to a large network. At the end of the week we together defined the key leverage factors for sustainable development in developed and underdeveloped regions. Everybody agreed that we had all learned in the process. Getting these solutions further deserved a greater case and spontaneously the "Lorentz BioPanel" was established. The formal text was agreed between all participants and the statement was presented at an international conference in the USA in April 2016.

The workshop greatly provided input for my research in which the joint statement played an important role. It triggered a renewed discussion with the Royal Dutch Academy of Sciences about their statement on biomass utilisation, which is highly debated among scientists within and outside the KNAW. Especially the new perspective to take the urgency of the Sustainable Development Goals (SDGs) as a focus to innovation related to climate change provides new arguments as this leads to different problem statements and gives different orientation to solutions. This is presently the core of my research and forms the basis for my plan to make a movie about how science can be put to action for SDGs.

As we concluded "Biobased production of energy, fuels and materials has been recognised for its potential to help mitigating these problems, but it is necessary to understand the complexity of the whole system before you can start to develop successful solutions." With the broader picture taken into account and consideration for biodiversity, opportunities for biomass production by poor nations, helping energy and food security and social development can be better designed, while it also helps with the implementation of biofuels and bioenergy systems in our western societies.

e. Evaluation by organizers and participants

In the beginning of 2017 the Lorentz Center started sending out a questionnaire, to receive feedback from the researchers visiting the center. Initially, the questionnaires were sent biweekly via email to all participants and organizers of the workshops of that week. Now the questionnaires are sent out for every workshop to collect the opinions of participants and organizers.

The questionnaire is anonymous and it is divided into aspects of the workshop, the facilities and the Lorentz Center in general. There is a separate part for the organizers as well. A remarkable result is that more than 50% of the organizers had never participated in a Lorentz Center workshop prior to organizing their own.

The results about the individual workshops are shared with the organizers for feedback and all the results are used to keep the Lorentz Center growing and to improve on different aspects of the workshops and the center itself. The first analysis of the questionnaire contains 38 workshops with a 50% response rate, it is nice to see our visitors like the concept of the Lorentz Center and enjoy the workshops. Based on the responses we are able to obtain insight what aspects the organizers and participants find to work well and we hope to get insights on where we can improve.

2.

COLLABORATIONS

Lorentz Center values its collaboration with partners like the Netherlands Institute for Advanced Study (NIAS), Centre Européen de Calcul Atomique et Moléculair (CECAM), Netherlands eScience Center, Rijksmuseum Boerhaave, and the Faculty of Science and Tohoku Forum for Creativity (TFC). Our partnerships allow us to organize special events for specific, new target groups.

a. NIAS

A collaboration between NIAS and the Lorentz Center was set up in 2006, aiming at bringing together perspectives from the humanities & social sciences with the natural & technological sciences, the fields of the two institutes. The NIAS-Lorentz advisory board oversees the activities of the Program, including the selection of workshops taking place at the Lorentz Center as well as the NIAS Lorentz Theme Groups and Distinguished Lorentz Fellows residing at NIAS.

The Distinguished Lorentz Fellows Patricia Osseweijer (2015/16) and Bert-Jaap Koops (2016/17) worked on topics addressing respectively various aspects of the transition to a sustainable 'Bio-Based Economy' and the concept of 'Privacy by Design' in modern technology.

b. CECAM and eScience Center

Our partnerships with the Centre Européen de Calcul Atomique et Moléculair (CECAM) and the Netherlands eScience Center again brought about workshops in the frontiers of computational science:

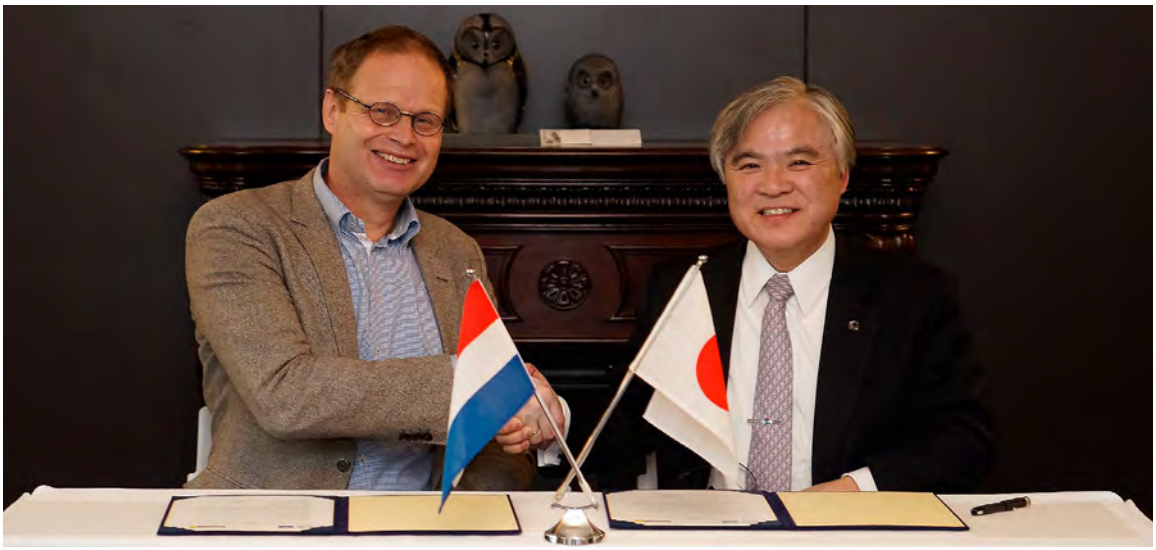
- Translating Data to Health, eScience Center, March 2016
- Reaction Coordinates from Molecular Trajectories CECAM, August 2016
- Visualizing Digital Humanities, eScience Center, June 2017
- eWUDAPT: Bringing eScience to Urban Climate Mapping and Modelling, eScience Center, June 2017

c. Rijksmuseum Boerhaave

The partnership with Rijksmuseum Boerhaave allows us to reach out to the broader public. This partnership dates from 2013 and aims at communicating the latest scientific activities of the international research community to the general public. Even though the building of Rijksmuseum Boerhaave was closed due to a major reconstruction during the years of this report, we were able to hold seven public events at different locations. For example, the event on 'Perspectives on Diversity, the Cultural Life of Absence' that gave us insight in the dreams of people with autism, blind and deaf people, or those who have undergone an amputation. A list of our public lectures can be found in appendix 3.

d. Faculty of Science, Leiden University

Regularly, workshop participants give lectures at the weekly science presentations of the Faculty of Science of Leiden University in the series of ´This Week's Discoveries'. In 2016 as well as in 2017 eight lectures were given by Lorentz Center participants, see Appendix 3.



Arjen Doelman (director Lorentz Center) and Sadayoshi Ito (director TFC)

e. Tohoku Forum for Creativity

Tohoku Forum for Creativity

In 2016 the Tohoku Forum for Creativity (TFC) and the Lorentz Center signed an 'Agreement on Academic Collaboration', to deepen the cooperation between our research centers. The signing ceremony took place during TFC's annual International Advisory Board Meeting, held on November 27th, 2016 at Tohoku University.

3.

HIGHLIGHTS

a. Workshops in the full scientific spectrum

Since the onset in 1997, the workshop program of the Lorentz Center has gradually expanded to encompass the full spectrum of natural and technological sciences. The success of the NIAS-Lorentz Program indicated an enthusiasm in the social sciences and humanities for the concept of our workshops. In addition, organizers of our workshops often establish collaborations substantiated with collective research grants. In times of increasingly tight research funding and more focus on complex societal challenges, a Lorentz Center expansion in the social sciences and humanities seemed more than justified.

Formally our expansion in the social sciences and humanities started in 2015. The Governing Board of Leiden University provided the start-up budget followed by an annual budget from the humanities, social sciences and law faculties. Starting with eight workshops in the NIAS-Lorentz Program, we organized 17 workshop in the social sciences and humanities in 2016 and 25 in 2017. We are happy that about two-thirds of these workshops span a bridge between social sciences & humanities and the natural & technological sciences. The NIAS-Lorentz Program is unique and provides researchers unprecedented opportunities to explore unpaved paths. Yet, we also welcome workshops that focus on either the social sciences or the humanities: after all, disciplinary research endeavors are the pillars for scientific progress.

The increase of workshop applications heralded the next step: expansion of the NIAS-Lorentz advisory board. We are proud that 15 outstanding new board members have accepted our invitation, from across the social sciences and humanities disciplines and from all over the Netherlands. All in all, we can conclude that our expansion in the social sciences and humanities has been successful so far. This means that based on its scope and programming, the Lorentz Center is now truly unique in the world.

b. Celebrating 20 years Lorentz Center

2017 was a special year for the Lorentz Center, in which we celebrated our 20th anniversary with various festivities. In the spring we started celebrations with a boat trip on the 'Kager' Lakes. Together with researchers and policy makers, who have been key to our success, we remembered the highlights of the past years and looked ahead to the future role of the Lorentz Center.

An exhibition in the Old University Library Leiden was also part of the celebrations of '20 years Lorentz Center'. Together with curator Marthe Sophie we compiled an exhibition consisting of artistic workshop posters. The exhibition with the theme 'Beyond the Edge of Research' focused on the posters depicting abstract and complex scientific subjects. In the autumn of 2017, part of the exhibition was moved to the City Hall of Leiden.

In September 2017 we closed the festivities with a BBQ with invited guests who had in various ways contributed to the success of the Lorentz Center: current colleagues from Leiden University and business partners as well as our former colleagues. While enjoying the sunny weather and an excellently catered BBQ by Homemade Catering, we were looking forward to many more years of successful collaboration.

c. Crowdfunding common room

The heart of the Lorentz Center - the common room – was up for renovation for some time. To save workshop funding, our team started a crowdfunding campaign in a creative way in 2016. The campaign of 'Good Research Starts with Good Coffee' was shared with stakeholders of the Lorentz Center for 5 weeks. This action proved successful and the required amount of 15,000 euros was soon brought together. The common room got its refurbishment in 2016. The yellow couch, known to many, did not survive it, but the coffee is even better now.

Thanks again to all generous donors for their contribution and enthusiastic reactions:

'An excellent venue, of the highest value to the scientific community,'

'Organizing a workshop is a breeze with the support from the Lorentz Center staff.'

'Great discussions need a great atmosphere!'

'Collaboration is the heart of science - we need places to meet, think and push our boundaries'

'Excellent format, closely approximating the ideal of academic Bildung.'

Jolanda de Vries (winner of the 2017 Huibregtsen Prize) and Arjen Doelman (director of the Lorentz Center)

d. Evening of Science and Society

Since 2016, the Lorentz Center has been involved in the event of the 'Evening of Science and Society' (Avond van Wetenschap en Maatschappij). This annual event is organized on behalf of the Ministry of Economic Affairs and the Ministry of Education, Culture and Science. During a festive dinner in the 'Ridderzaal', science in the Netherlands is put in the limelight with prominent figures from science, culture, business, politics, media and sports present. On this evening, the Huibregtsen Prize is awarded to a researcher who performs highly innovative research with social relevance.

In 2016, the prize went to Prof. Ronald Hanson (TU Delft) for his research project 'Safe surfing on the quantum internet'. In 2017 Prof. Jolanda de Vries (Radboud Universiteit Nijmegen) won the prize for her research project 'Natural dendritic cell vaccines'. In addition to a cash prize and a bronze sculpture, the winner is awarded a Lorentz Center workshop.
As a national scientific workshop center, the presence of the Lorentz Center on this evening contributes to establishing new contacts and maintaining existing relationships, both with researchers and policy makers. In addition, it increases our visibility in disciplines currently underrepresented in our workshops: during the conversations at the tables, seeds have been planted that may lead to new workshops.

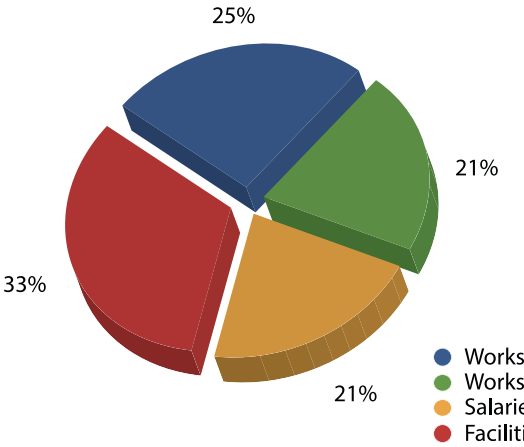
4.

NUMBERS

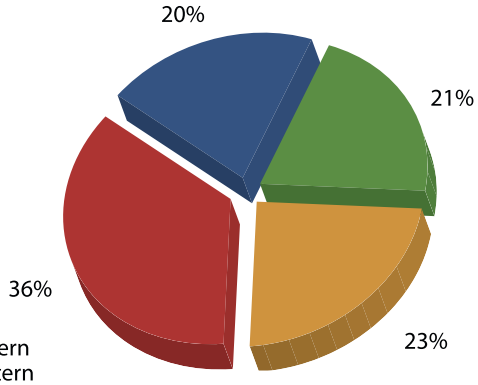
The Lorentz Center hosted 76 workshops in 2016 of which 17 in the field of Social Sciences and Humanities (SSH). In 2017 the number of workshops increased to 81 of which 25 SSH-related (Appendix 1). Public lectures organized together with Rijksmuseum Boerhaave and the Faculty of Science are listed in appendix 3.

a. Budget

The Lorentz Center is funded 40-40% by Leiden University and the Dutch Science Foundations, while a major part of the remaining funding is being granted by various organizations directly to organizers of the workshops. Workshops receive a small workshop budget from the Lorentz Center to cover part of the hotel and travel expenses of participants. The costs not visible for the organizers of a workshop are e.g. salary and facility costs. Organizers usually complement this budget with external funds: in 2016 79% and in 2017 81% of the workshops were organized with external funding. The figure shows the average budget per workshop in 2016-2017.



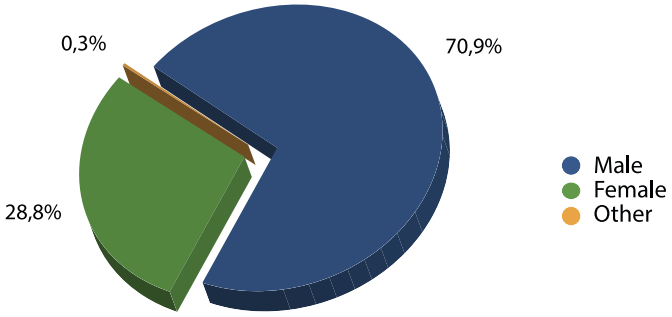
Average budget per workshop @Oort



Average budget per workshop @Snellius

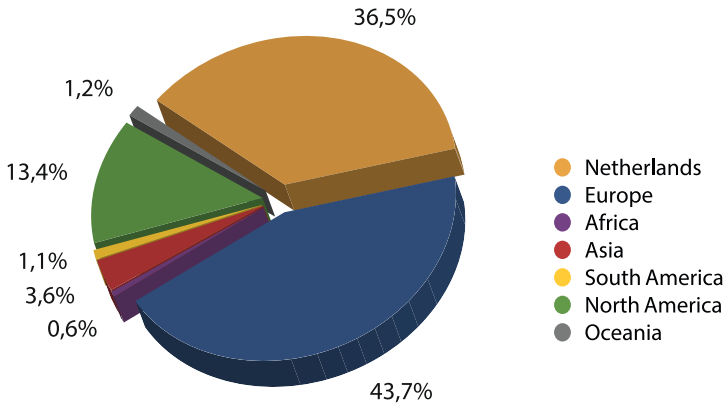
b. Diversity

The Lorentz Center aims at diversity in the broadest sense. For example, this includes a proportionate gender distribution. Although the Lorentz Center scores reasonably well with almost 30% women participants on average, the percentage can be different per discipline & workshop. Hence, gender balance remains on our agenda.



The participation of junior researchers is one of the assets of the Lorentz Center. Many researchers owe their next position or collaboration with foreign colleagues to the contacts made at our workshops. Active participation of junior researchers is one of the criteria the scientific advisory boards take into account in the evaluation of proposals.

The geographical distribution of our visitors indicates that the majority comes from Europe, although representatives of more than 50 nationalities visit the Lorentz Center annually. The Lorentz Center is exploring options to attract more participants from Africa, North & South America, Oceania and Asia.



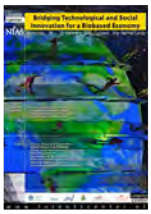
Top 5 countries in 2016-2017

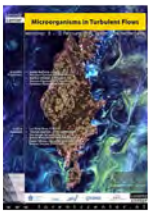
1. Netherlands
2. United States
3. United Kingdom
4. Germany
5. France

APPENDIX 1

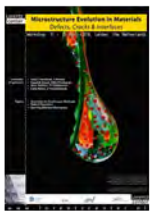
OVERVIEW WORKSHOPS 2016 - 2017

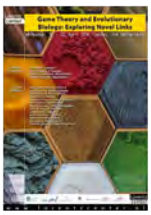
January - June 2016

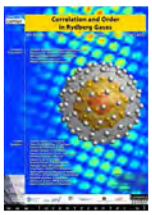



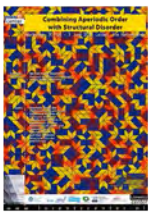



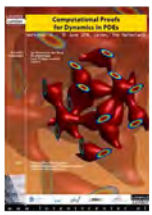




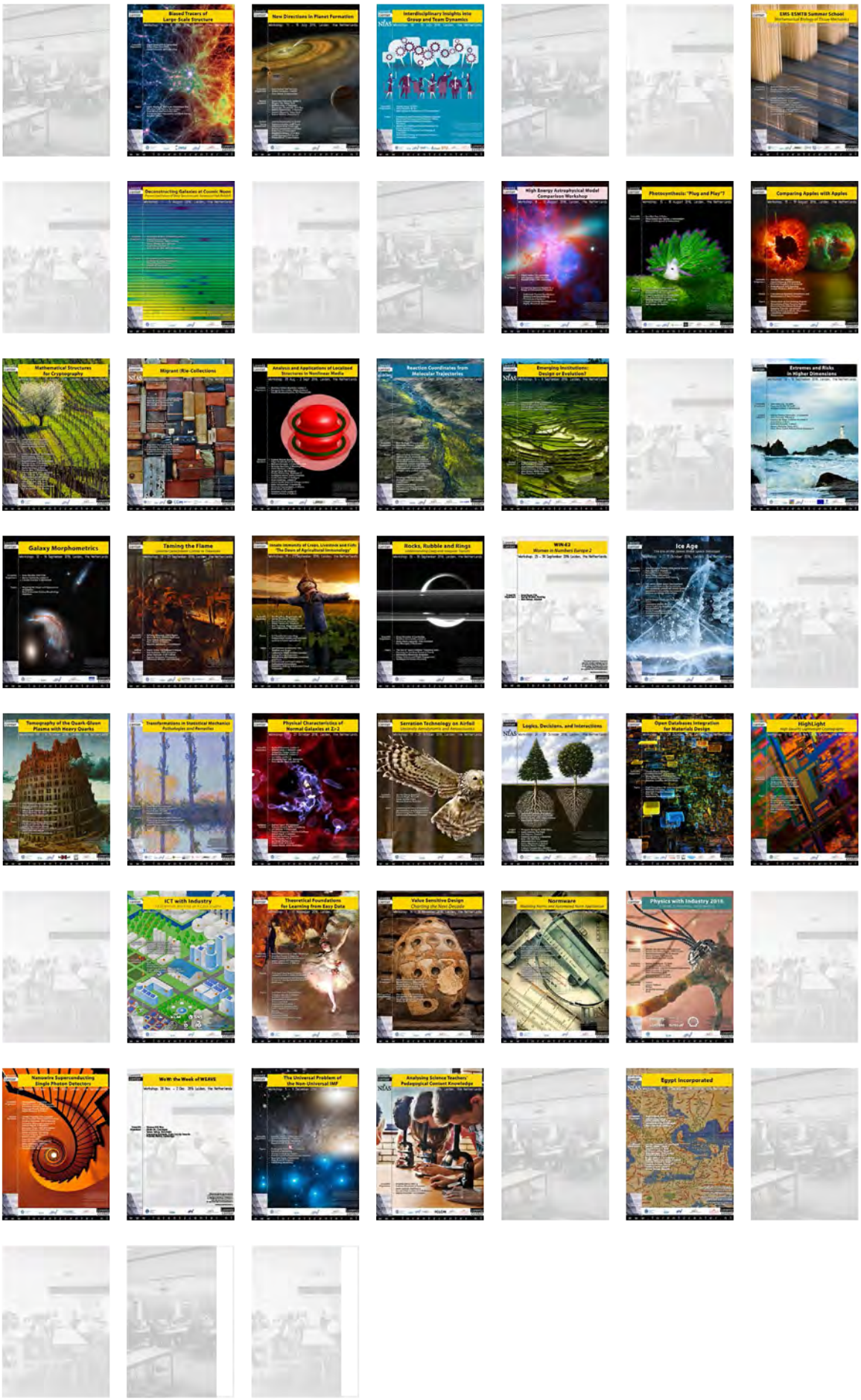






July - December 2016



2016

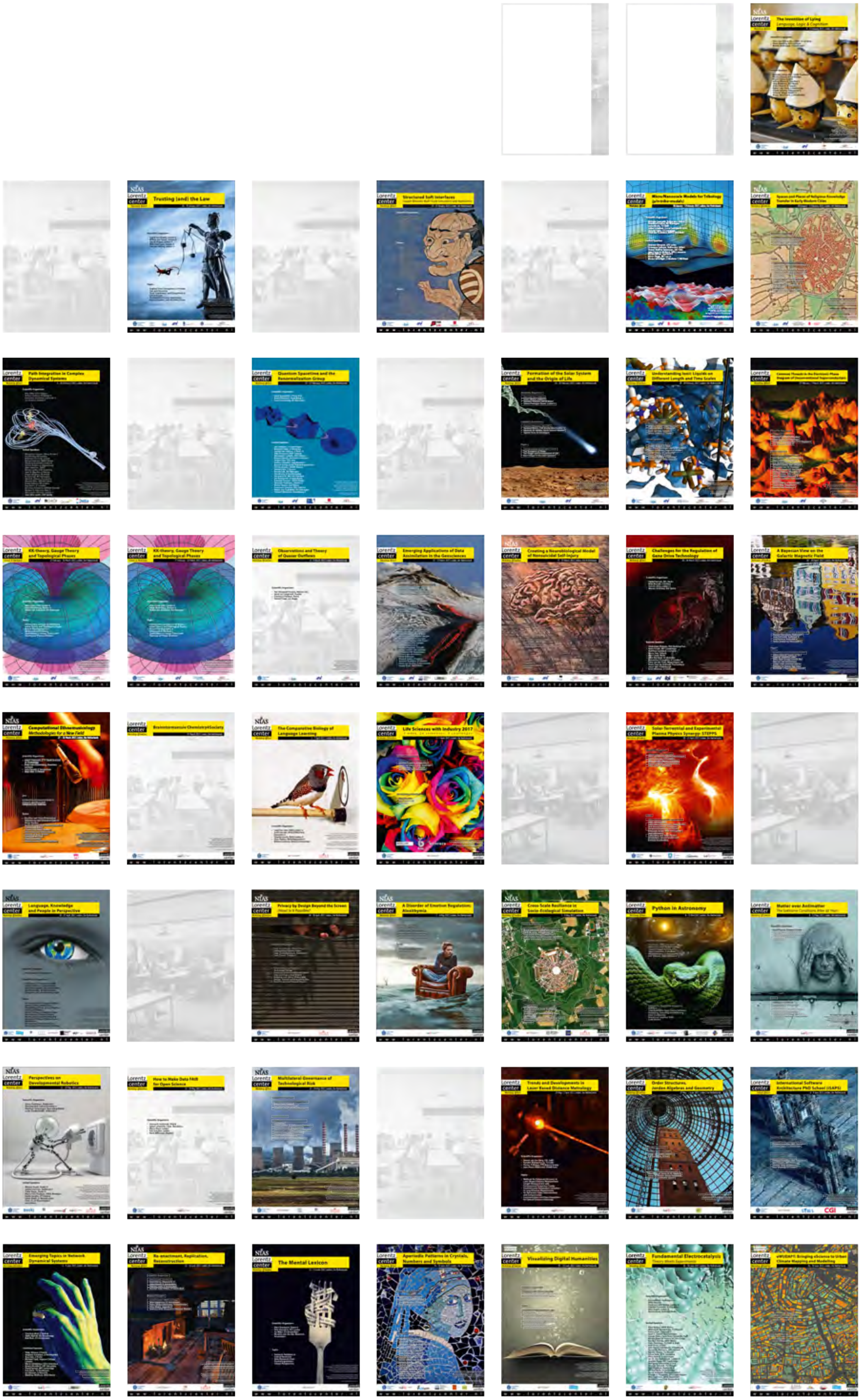
Week	Venue	Workshop Title	Astronomy	Chemistry	Computational Science	Earth Sciences	Economics	Humanities	Informatics	Life Sciences	Mathematics	Medical Sciences	Physics	Social Sciences	Technology & Engineering
1	Oort	Translational Aging Research: Challenges and Opportunities										X			
1	Snellius	Gravity, Quantum Fields and Entanglement											X		
2	Oort	Quantitative 3D X-Ray Imaging: From Tomographic Images to Metrics											X		
2	Snellius	Perspectives on Diversity: the Cultural Life of Absence						X						X	
3	Snellius	Bridging Technological and Social Innovation for a Biobased Economy			X	X				X				X	X
4	Oort	WorkPlaNS: WORKshop for PLAnetary Nebulae observationS	X												
4	Snellius	Population Consequences of Sound Impact on Fish				X				X			X		X
5	Oort	The X-ray Spectral-Timing Revolution	X												
6	Snellius	Microorganisms in Turbulent Flows								X			X		
7	Oort	Unified Correspondence			X			X	X		X			X	
8	Oort	Globular Clusters and Galaxy Halos	X												
9	Oort	SAMCO: Surrogates-Assisted Multi-Criteria Optimization							X						X
10	Oort	Tightening the Articulation Between Language and Number						X		X				X	
10	Snellius	Statistics of Extrema in Large Scale Structure	X												
11	Oort	Optogenetics: From Molecules to Applications		X						X		X			X
11	Snellius	Open Machine Learning 2016							X						
12	Snellius	Translating Data to Health			X				X	X		X			
13	Snellius	SWEDIBLES	X	X											
14	Oort	Fixed-Parameter Computational Geometry							X						
14	Snellius	Dark Matter on the Smallest Scales	X										X		
15	Oort	Taking the Measure of One-Dimensional Dynamics									X				
15	Snellius	Microstructure Evolution in Materials: Defects, Cracks & Interfaces			X						X		X		
16	Oort	Game Theory and Evolutionary Biology: Exploring Novel Links			X				X	X					
16	Snellius	Emotions as Feedback Signals			X				X	X				X	
17	Oort	Assessing Hallucinations Across Disorders										X			
19	Oort	Topological Matter at ħZero: Photonic, Acoustic, and Mechanical Analogues of Electronic Topological Insulators											X		
19	Snellius	The Morality of Inequality: an Interdisciplinary Perspective on How to Make a Difference						X		X				X	
20	Oort	Fractality and Fractionality									X				
20	Snellius	The Unusual Suspects in Neurodegeneration: Role of Non-Proteinogenic Amino Acids		X						X		X			
21	Oort	Adversarial Risk Analysis for Critical Infrastructure			X				X					X	X
21	Snellius	Anisotropy and Shape in Biological Materials: From Structure to Functionality								X			X		
22	Oort	Correlation and Order in Rydberg Gases											X		

Week	Venue	Workshop Title	Astronomy	Chemistry	Computational Science	Earth Sciences	Economics	Humanities	Informatics	Life Sciences	Mathematics	Medical Sciences	Physics	Social Sciences	Technology & Engineering
22	Snellius	Combining Aperiodic Order with Structural Disorder									X				
23	Oort	Decarbonized Futures: Narrating Low Carbon Societies			X	X		X					X	X	X
23	Snellius	Computational Proofs for Dynamics in PDEs									X				
24	Oort	Pathways to Solar Hydrogen Technologies		X									X	X	X
25	Oort	A Cosmic Census of the Galaxies in the Distant Universe	X												
25	Snellius	Children Seen and Heard Across the Globe						X						X	
26	Oort	Search Games: Theory and Algorithms							X		X				
27	Snellius	Biased Tracers of Large-Scale Structure	X										X		
28	Oort	New Directions in Planet Formation	X												
28	Snellius	Interdisciplinary Insights into Group and Team Dynamics			X				X						
30	Oort	EMS-ESMTB Summer School: Mathematical Biology of Tissue Mechanics			X					X	X				
31	Oort	Deconstructing Galaxies at Cosmic Noon	X										X		
32	Snellius	High Energy Astrophysical Model Comparison Workshop	X												
33	Oort	Photosynthesis: "Plug and Play"?		X						X			X		
33	Snellius	Comparing Apples with Apples: Concordance Between Simulations and Observations of Star Formation	X												
34	Oort	Mathematical Structures for Cryptography									X				
34	Snellius	Migrant (R)e-Collections			X			X						X	
35	Oort	Analysis and Applications of Localized Structures in Nonlinear Media									X		X		
35	Snellius	Reaction Coordinates from Molecular Trajectories (CECAM winner)		X	X										
36	Oort	Emerging Institutions: Design or Evolution?			X									X	
37	Oort	Extremes and Risks in Higher Dimensions									X				
37	Snellius	Galaxy Morphometrics	X												
38	Oort	Taming the Flame; Divertor Detachment Control in Tokamaks											X		
38	Snellius	Innate Immunity of Crops, Livestock and Fish: "The Dawn of Agricultural Immunology"								X					
39	Oort	Rocks, Rubble and Rings: Understanding Deep and Irregular Transits	X												
39	Snellius	WIN-E2: Women in Numbers Europe-2									X				
40	Oort	Ice Age – The Era of the James Webb Space Telescope	X												
41	Oort	Tomography of the Quark-Gluon Plasma with Heavy Quarks											X		
41	Snellius	Transformations in Statistical Mechanics: Pathologies and Remedies									X		X		
42	Oort	Physical Characteristics of Normal Galaxies at Z>2	X												
42	Snellius	Serration Technology on Airfoil: Unsteady Aerodynamic and Aeroacoustics											X		X

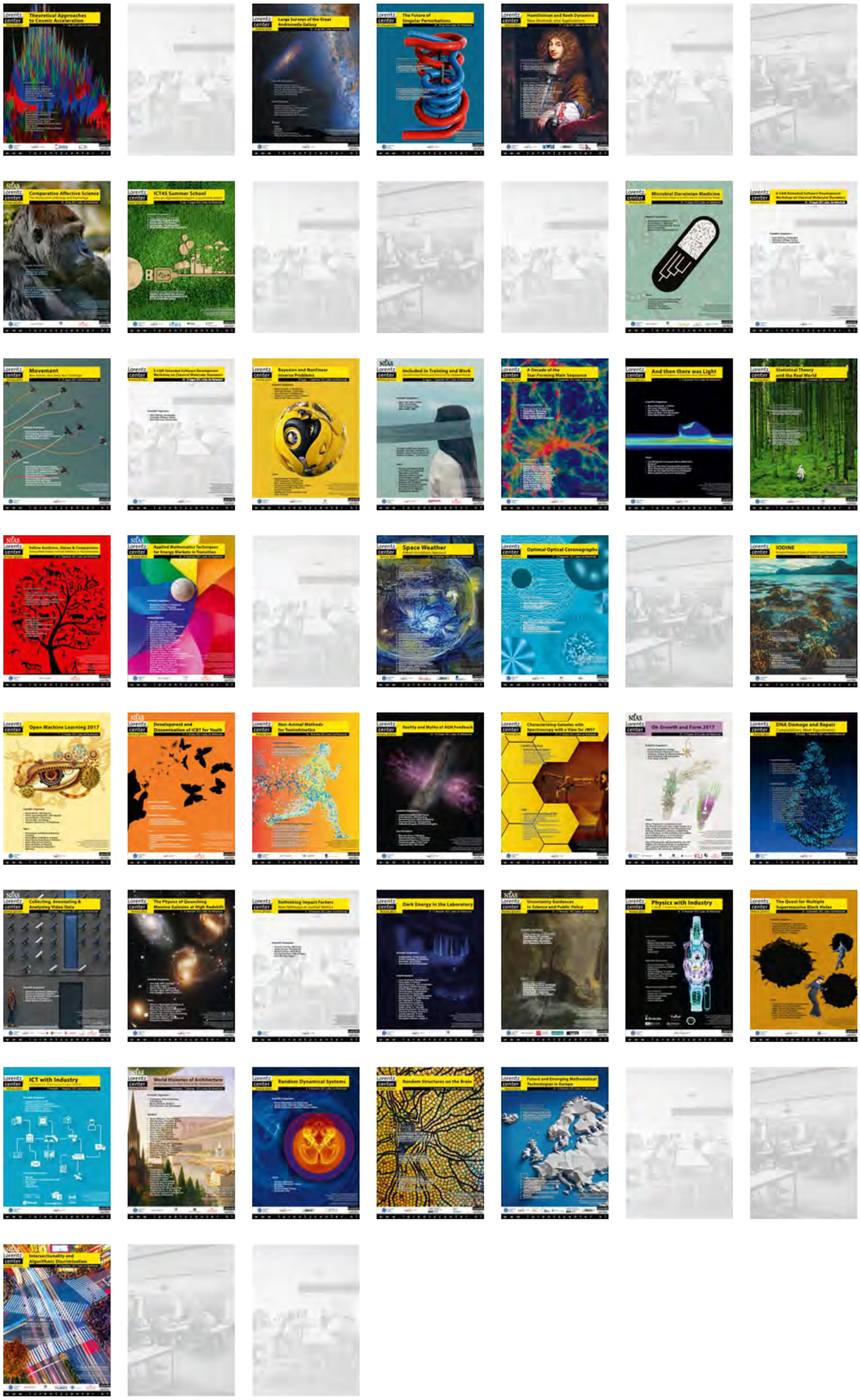
2016

Week	Venue	Workshop Title	Astronomy	Chemistry	Computational Science	Earth Sciences	Economics	Humanities	Informatics	Life Sciences	Mathematics	Medical Sciences	Physics	Social Sciences	Technology & Engineering
43	Oort	Logics, Decisions, and Interactions			X		X		X					X	
43	Snellius	Open Databases Integration for Materials Design (OptIMaDe)			X								X		
44	Oort	HighLight: High-Security Lightweight Cryptography							X						
45	Oort	ICT with Industry							X						X
45	Snellius	Theoretical Foundations for Learning from Easy Data			X				X						
46	Oort	Value Sensitive Design: Charting the Next Decade							X					X	
46	Snellius	Normware: Modeling Norms and Automated Norm Application							X						
47	Oort	Physics with Industry 2016											X		X
48	Oort	Nanowire Superconducting Single Photon Detectors											X		
48	Snellius	WoW: the Week of WEAVE	X												
49	Oort	The Universal Problem of the Non-Universal IMF	X												
49	Snellius	Analysing Science Teachers' Pedagogical Content Knowledge: Digging into the Data											X	X	
50	Snellius	Egypt Incorporated: Economic, Political and Cultural Developments from Late Antiquity to Islam						X							
		Total 76 workshops	18	6	16	3	1	8	16	14	13	5	23	15	10

January - June 2017



July - December 2017



2017

Week	Venue	Workshop Title	Astonomy	Chemistry	Computational Science	Earth Sciences	Informatics	Life Sciences	Mathematics	Physics	Economics	Humanities	Law	Social Sciences	Medical Sciences	Technology & Engineering
2	Oort	The Invention of Lying: Language, Logic & Cognition			X		X					X		X		
2	Snellius	Disorder in Condensed Matter and Black Holes								X						
3	Oort	Trusting (and) the Law						X								
4	Oort	Structured Soft Interfaces: Caught Between Multi-Scale Simulation and Application		X	X											
5	Oort	Micro/Nanoscale Models for Tribology (μ/n-tribo-models)								X						X
5	Snellius	Spaces and Places of Religious Knowledge Transfer in Early Modern Cities			X							X				
6	Oort	Path Integration in Complex Dynamical Systems							X	X						
7	Oort	Quantum Spacetime and the Renormalization Group								X						
8	Oort	Formation of the Solar System and the Origin of Life	X													
8	Snellius	Understanding Ionic Liquids on Different Length and Time Scales		X	X					X						X
9	Oort	Common Threads in the Electronic Phase Diagram of Unconventional Superconductors								X						
9	Snellius	KK-theory, Gauge Theory and Topological Phases							X	X						
10	Oort	KK-theory, Gauge Theory and Topological Phases							X	X						
10	Snellius	Observations and Theory of Quasar Outflows	X													
11	Oort	Emerging Applications of Data Assimilation in the Geosciences			X	X			X							
11	Snellius	Creating a Neurobiological Model of Nonsuicidal Self-Injury						X						X	X	
12	Oort	Challenges for the Regulation of Gene Drive Technology						X						X		
12	Snellius	A Bayesian View on the Galactic Magnetic Field	X		X		X									
13	Oort	Computational Ethnomusicology: Methodologies for a New Field			X		X					X				
14	Oort	The Comparative Biology of Language Learning			X			X						X		
14	Snellius	Life Sciences with Industry 2017						X								X
15	Snellius	Solar-Terrestrial and Experimental Plasma Physics Synergy: STEPPS	X							X						
16	Snellius	Language, Knowledge and People in Perspective			X							X		X		
17	Snellius	Privacy by Design Beyond the Screen: (How) Is it Possible?					X					X		X		
18	Oort	A Disorder of Emotion Regulation: Alexithymia						X						X	X	
18	Snellius	Cross-Scale Resilience in Socio-Ecological Simulations			X			X						X		X
19	Oort	Python in Astronomy	X		X											
19	Snellius	Matter over Antimatter: The Sakharov Conditions After 50 Years	X							X						
20	Oort	Perspectives on Developmental Robotics			X		X	X						X		
20	Snellius	How to Make Data FAIR for Open Science			X			X							X	

Week	Venue	Workshop Title	Astonomy	Chemistry	Computational Science	Earth Sciences	Informatics	Life Sciences	Mathematics	Physics	Economics	Humanities	Law	Social Sciences	Medical Sciences	Technology & Engineering
21	Oort	Multilateral Governance of Technological Risk												X		X
22	Oort	Trends and Developments in Laser Based Distance Metrology								X						
22	Snellius	Order Structures, Jordan Algebras and Geometry							X							
23	Oort	International Software Architecture PhD School (iSAPS)					X									X
23	Snellius	Emerging Topics in Network Dynamical Systems							X							
24	Oort	Re-enactment, Replication, Reconstruction		X								X				X
24	Snellius	The Mental Lexicon			X							X				
25	Oort	Aperiodic Patterns in Crystals, Numbers and Symbols					X		X	X						
25	Snellius	Visualizing Digital Humanities			X	X	X									X
26	Oort	Fundamental Electrocatalysis: Theory Meets Experiments		X	X					X						
26	Snellius	eWUDAPT: Bringing eScience to Urban Climate Mapping and Modelling			X	X	X									X
27	Oort	Theoretical Approaches to Cosmic Acceleration: Connecting String, Supergravity and Quantum Field Theory Aspects of (Near-) De Sitter Space	X													
28	Oort	Large Surveys of the Great Andromeda Galaxy	X													
28	Snellius	The Future of Singular Perturbations							X							
29	Oort	Hamiltonian and Reeb Dynamics: New Methods and Applications							X							
30	Snellius	Comparative Affective Science: The Intersection of Biology and Psychology						X						X		
31	Oort	ICT4S Summer School: How Can Digitalization Support a Sustainable Future?					X									
33	Oort	Microbial Darwinian Medicine: A Workshop at the Interface of Medicine and Microbial Eco-Evolutionary Biology						X							X	
33	Snellius	E-CAM Extended Software Development Workshop on Classical Molecular Dynamics		X	X											
34	Oort	Movement: New Sensors, New Data, New Challenges			X	X	X	X								
34	Snellius	E-CAM Extended Software Development Workshop on Classical Molecular Dynamics		X	X											
35	Oort	Bayesian and Nonlinear Inverse Problems							X							
35	Snellius	Included in Training and Work: Transforming Policies and Practices for Disabled People												X		0
36	Oort	A Decade of the Star-Forming Main Sequence	X		X											
36	Snellius	And then there was Light: Electromagnetic Signatures of Stellar Mass Binary Black Hole Mergers	X													
37	Oort	Statistical Theory and the Real World							X							
37	Snellius	Fellow Brethren, Slaves and Companions; Human/ Non-Human Animal Relations in Transformation						X						X		

Week	Venue	Workshop Title	Astonomy	Chemistry	Computational Science	Earth Sciences	Informatics	Life Sciences	Mathematics	Physics	Economics	Humanities	Law	Social Sciences	Medical Sciences	Technology & Engineering
38	Oort	Applied Mathematics Techniques for Energy Markets in Transition			X				X		X			X		X
39	Oort	Space Weather: A Multi-Disciplinary Approach			X					X						
39	Snellius	Optimal Optical Coronagraphs	X													
40	Snellius	IODINE: Biogeochemical Cycle of Iodine and Human Health		X				X							X	
41	Oort	Open Machine Learning 2017			X		X									
41	Snellius	Development and Dissemination of iCBT for Youth												X		
42	Oort	Non-animal Methods for Toxicokinetics: Meeting New Paradigms in Toxicology			X			X							X	
42	Snellius	Reality and Myths of AGN Feedback	X													
43	Oort	Characterizing Galaxies with Spectroscopy with a View for JWST	X													
43	Snellius	On Growth and Form 2017			X			X	X			X				
44	Oort	DNA Damage and Repair: Computations Meet Experiments		X	X			X								
44	Snellius	Collecting, Annotating & Analyzing Video Data				X						X		X		
45	Oort	The Physics of Quenching Massive Galaxies at High Redshift	X													
45	Snellius	Rethinking Impact Factors: New Pathways in Journal Metrics												X		X
46	Oort	Dark Energy in the Laboratory	X							X						
46	Snellius	Uncertainty Guidances in Science and Public Policy			X	X		X		X				X		X
47	Oort	Physics with Industry 2017								X						
47	Snellius	The Quest for Multiple Supermassive Black Holes: A Multi-Messenger View	X													
48	Oort	ICT with Industry 2017					X									
48	Snellius	World Histories of Architecture										X		X		
49	Oort	Random Dynamical Systems							X							
49	Snellius	Random Structures on the Brain						X	X							
50	Oort	Future and Emerging Mathematical Technologies in Europe							X							
51	Snellius	Intersectionality and Algorithmic Discrimination: Intersecting Disciplinary Perspectives			X		X							X		
		Total 81 workshops	16	8	29	6	14	19	16	17	1	10	0	20	6	12

APPENDIX 2

SCIENTIFIC ADVISORY BOARDS

BOARD MEMBERS IN 2016

Astronomy Advisory Board

Chair

Sera Markoff	Astronomical Institute 'Anton Pannekoek'

Members

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Jelle Kaastra	SRON Netherlands Institute for Space Research
Huib Jan van Langevelde	Joint Institute for VLBI ERIC (JIVE) / Leiden University
Danny Lennon	European Space Agency (ESA)
Onno Pols	Radboud University
Marina Rejkuba	European Southern Observatory (ESO)
David Wilner	Harvard University

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Jaap Murre	University of Amsterdam
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Patricia Lago	VU Amsterdam
Erik Poll	Radboud University
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Fons Verbeek	Leiden University
Ronald de Wolf	Center for Mathematics and Informatics (CWI)

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Sibrand Poppema	University of Groningen

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Lieven Vandersypen	Delft University of Technology
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Wim van der Zande	ASML

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Eric Postma	Tilburg University
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Peter Schall	University of Amsterdam
Lieven Vandersypen	Delft University of Technology
Daniel Vanmaekelbergh	Utrecht University
Els de Wolf	National Institute for Subatomic Physics (NIKHEF)

APPENDIX 3

PUBLIC EVENTS

PUBLIC EVENTS IN 2016-2017

January 10, 2016
Perspectives on Diversity, The Cultural Life of Absence
Douwe Draaisma, Jascha Blume, Vincent Bijlo

February 18, 2016
Catchy Categories for the Celestial Emporium of Beneficial Knowledge
Michael Moortgat, Nachoem Wijnberg

May 26, 2016
The Good, the Bad, and the Calculable: the Pro- and Cons of Terrorism Risk Analysis
Quirine Eijkman, Detlof von Winterfeldt

January 10, 2017
Ladder of Lies and Integrity Risks
Jan Henk Van der Velden

June 13, 2017
Conservation Facsimiles in Luxor
Carlos Bayod Lucini

September 14, 2017
Laughing Dogs and Jealous Cats
Pim Martens

December 19, 2017
Fairness and Accountability of Sociotechnical Algorithmic Systems
Danah Boyd

LECTURES AT THE FACULTY IN THE 'THIS WEEK'S DISCOVERY' SERIES

2016

2 February
Chris Done, Durham University:
"Black Holes, on the Black Background of Space - So How are You Meant to See Them?"

16 February
Alessandra Palmigiano, Delft University of Technology:
"Logics for Social Behaviour"

1 March
Kalyanmoy Deb, Michigan State University:
"Breaking the Billion Variable Barrier in Real-World Optimization"

5 April
Carlos Frenk, Durham University:
"What is the Dark Matter?"

10 May
Naomi Ellemers, Utrecht University:
"Groups as Moral Anchors"

20 September
Piero Martin, University of Padova:
"Self-Organized Helical Fusion Plasmas: When Kinking Matters"

1 November
Wioletta Ruszel, Delft University of Technology:
"The Sandpile Model – A Simple Model for Cascades"

8 November
Alexandru Iosup, Delft University of Technology:
"TMassivizing Computer Systems = Making Modern Computer Systems Scalable, Reliable, High-Performance, yet Efficient and Easy-to-Use"

2017

21 February
Imke de Pater, University of California:
"Io, the Most Volcanically Active Body in our Solar System"

7 March
Roberto Maiolino, University of Cambridge:
"The Role of Massive Galactic Outflows in Galaxy Evolution"

18 April
Lora Aroyo, VU Amsterdam:
"Data Science with Human in the Loop: Harnessing User Semantics at Scale"

9 May
Daniela Huppenkothen, New York University:
"Unravelling the Long-Term Evolution of Black Holes with Machine Learning"

10 October
Heidi Seibold, University of Zurich:
"OpenML - An Online Platform for Collaborative and Open Machine Learning"

24 October
Renske Smit, University of Cambridge:
"Galaxies 800 Million Years after the Big Bang Seen with the Atacama Large Millimetre Array"

14 November
Leonard Smith, London School of Economics and Political Science:
"Why the Weather Forecasts of the Future Forecast will Not Forecast the Future?"

5 December
Almut Schüz, Max-Planck-Institute for Biological Cybernetics:
"What the Structure of the Cortex Tells us about its Particular Function"

Colophon:

Contact

Lorentz Center@Oort
Niels Bohrweg 2
2333 CA Leiden
+31 71 527 5400

Lorentz Center@Snellius
Niels Bohrweg 1
2333 CA Leiden
+31 71 527 5401

info@lorentzcenter.nl
www.lorentzcenter.nl

Design
SuperNova Studios, Amsterdam

Grafische productie
UFB / Grafimedia

Photography
Tohoku Forum for Creativity, Sendai
Hucopix, Amsterdam

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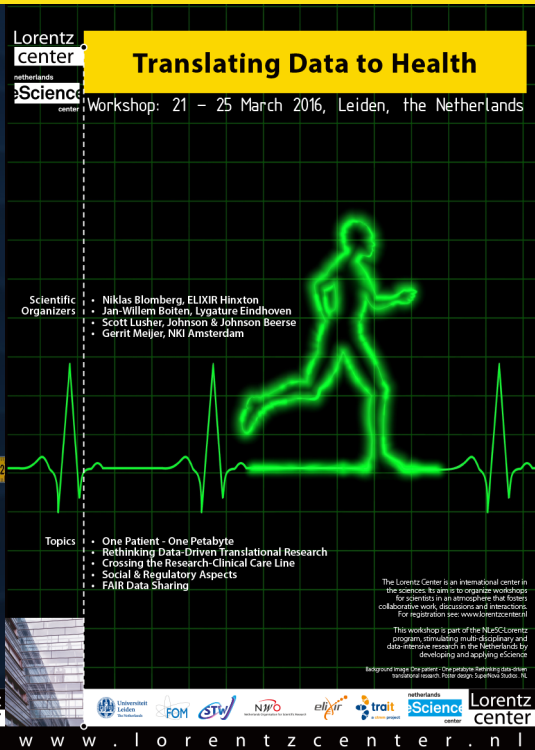

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