



## HAUSDORFF SPECIALS



## Huge win in preliminary stage of excellence competition

*Press release of the University of Bonn  
(translated and slightly modified) from September 29, 2017*

### The University of Bonn will present seven full proposals.

The preliminary round of the Excellence Strategy by the federal and state governments was very successful for the University of Bonn. The international Committee of Experts for the Excellence Strategy, which was appointed by the Joint Science Conference (GWK) on the basis of recommendations by the German Research Foundation (DFG) and the German Council of Science and Humanities (WR, Wissenschaftsrat) has invited the University of Bonn to submit seven full proposals. The full versions of the proposals are now being prepared and have to be submitted to the DFG by February 21, 2018. The rector of the University, Prof. Dr. Michael Hoch, thanks all those who have been involved in

science and administration at the University of Bonn for their excellent work.

### The call for full proposals is addressed to the following proposed Clusters of Excellence:

- Beyond Slavery and Freedom: Agency within asymmetrical structures of individual and group dependencies in pre-modern societies
- Computational Science for Complex Systems – CASCADE
- Hausdorff Center for Mathematics: Grundlagen, Modelle, Anwendungen
- ImmunoSensation2: the immune sensory system
- PhenoRob – Robotics and Phenotyping for Sustainable Crop Production
- ECONtribute: Markets & Public Policy (jointly with the University of Cologne)
- ML4Q – Matter and Light for Quantum Computing (jointly with the RWTH Aachen and the University of Cologne)

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With this, the University of Bonn is the most successful university in this funding line in Germany. In total, the University of Bonn submitted eight draft proposals at the beginning of April, amongst them three projects in cooperation with neighboring universities.

“After our victory in this stage, we will now concentrate on writing the full proposals and on preparing a proposal for the second funding line,” explains Prof. Dr. Hoch: “Our goal is now an application as University of Excellence.” To this end, universities must have attained funding for at least two Clusters of Excellence. “The chances for such a success are excellent now.” Proposals for this funding line must be submitted by December 10, 2018.

### Strong competition – strong federal state NRW

Professor Dr. Michael Hoch is very pleased with the outcome of the review: “During the past months the people in the university departments, in the administration, and in the rector’s office worked very hard on the Excellence Strategy. I thank all those who have been involved for their great efforts and I congratulate the seven projects which have proceeded to the next stage. In the months to come, there is plenty of work to be done. We need to contend with strong competition, if we want to live up to our own standards and to the international reputation of the University of Bonn.” The rector is also very pleased with the high appreciation of research projects in North Rhine-Westphalia on the whole. “Our federal state has received great opportunities from the Excellence Competition,” explains Hoch.

### Earlier phases of the Excellence Initiative

In the first funding period of the Excellence Initiative, the University of Bonn was already successful, and attained funding for two Clusters of Excellence and two Graduate Schools.

### The funded projects were:

- Cluster of Excellence “Mathematics: Foundations, Models, Applications – Hausdorff Center for Mathematics” (since 2006; jointly with the Department of Economics)
- Cluster of Excellence “ImmunoSensation: the immune sensory system” (since 2012)
- Graduate School “Bonn Graduate School of Economics” (2006 – 2011)
- Graduate School “Bonn-Cologne Graduate School of Physics and Astronomy” (since 2006; jointly with the University of Cologne)

### University of Bonn – international reputation in research

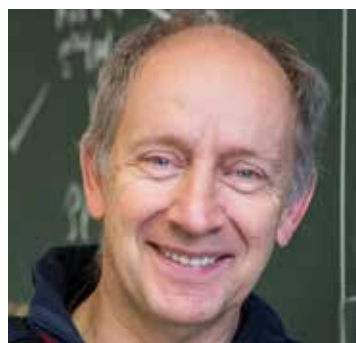
The University of Bonn is an important research university in Germany, and has a good reputation worldwide. Quite recently, the University was ranked one of the ten best universities in Germany in the worldwide university ranking from the Chinese Jiaotong University in Shanghai and in the ranking of the British magazine Times Higher Education (THE), and is one of the TOP 150 universities in the world.

## Change in the Cluster of Excellence for Mathematics

*Press release of the University of Bonn  
(slightly modified) from September 29, 2017*

**Starting from October 2017, Prof. Christoph Thiele will take over the scientific directorship of the Hausdorff Research Institute for Mathematics (HIM) at the University of Bonn from Prof. Wolfgang Lück.**

Christoph Thiele is currently a professor at the Hausdorff Center for Mathematics (HCM), a Cluster of Excellence at the University of Bonn. Following his Ph.D. at Yale University in 1995, Thiele was a research assistant at the University of Kiel, qualified as a professor there, and became a professor at the University of California in Los Angeles. He has held the renowned Hausdorff Chair at HCM, which the Cluster of Excellence uses to bring outstanding researchers to Bonn, since 2012. Thiele was vice-president of the American Mathematical Society between 2013 and 2016. In his research, the 49-year-old mathematician works on harmonic analysis.



Prof. Dr. Wolfgang Lück



Prof. Dr. Christoph Thiele

He was awarded the Salem Prize in 1996 and the Humboldt Research Award in 2010.

Thiele follows Prof. Wolfgang Lück, who was director at HIM from October 2011. During his term of office, Wolfgang Lück increased the international visibility of the institute and the sustainability of the research programs, particularly by introducing follow-up workshops. In these workshops, some months after a research program, the participants meet once again in order to discuss the developments that have happened in the meantime.

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As professor at the Mathematical Institute, the 60-year-old Leibniz Prize winner and former president of the German Mathematical Society will now more intensively devote himself to his Advanced Grant from the European Research Council, which Lück received back in June 2015. He also remains a Max Planck Fellow at the Max Planck Institute of Mathematics.

### So far, HIM has hosted over 4,000 mathematicians

The Hausdorff Research Institute for Mathematics (HIM) at the University of Bonn organizes long-term international research programs on topics relating to mathematics and

mathematical economics. It was founded in 2007 as part of the Hausdorff Center for Mathematics (HCM), a Cluster of Excellence at the University of Bonn. HIM gives outstanding researchers the opportunity to work together on current research topics in thematically focused programs over several months. This offer has already drawn over 4,000 renowned mathematicians and talented early career researchers to Bonn from around the world. In this way, HIM initiates and promotes international collaborations and brings about new research programs.

*Here you can find an interview with Prof. Dr. Wolfgang Lück.*

## Shanghai Ranking: Bonn's economists and mathematicians at the top

*Extract of press release of the University of Bonn (slightly modified) from August 18, 2017*

**In the newly published Shanghai ranking, Bonn's economics and mathematics departments rank in the top spots:**

Bonn economics ranks 20th worldwide, making Bonn the leading German university in this field. Also leading in Germany is Bonn's mathematics, ranked 32nd worldwide.

Bonn's continued success in these results lends renewed momentum to the HCM's current Excellence Initiative. The Hausdorff Center for Mathematics (HCM) is a Cluster of Excellence at the University of Bonn. At the HCM, German and international academics conduct research into many problems in mathematics and mathematical economics. The Cluster was founded in 2006 and extended for a second funding period in 2012.



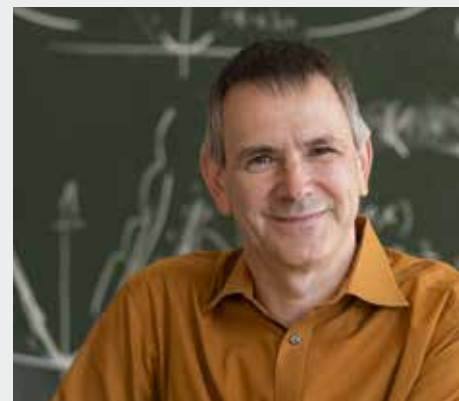
*You can read the university's press release here.*

For those who are interested in the whole Shanghai Ranking's Global Ranking of Academic Subjects 2017, you can have a look at the ranking for [mathematics](#) and [economics](#) here.



## Daniel Huybrechts in Academia Europaea

This summer, Prof. Dr. Daniel Huybrechts was elected as [member of the Academia Europaea](#).



## Stefan Müller receives a teaching award from the University of Bonn

*July 7, 2017*

**The University of Bonn honors outstanding teaching skills or exceptional services with teaching awards at the University Festival.**

One of the four awards granted by the Faculty of Mathematics and Natural Sciences was presented to Professor Dr. Stefan Müller, Hausdorff Chair and Associate Director of the Hausdorff Research Institute for Mathematics.

The prize winners are named by the faculties; in-house nominations are made on the basis of student evaluations or committee decisions with substantial student participation.

## HAUSDORFF SPECIALS

## Lillian Pierce wins the AWM-Sadosky Research Prize in Analysis

July 7, 2017

The Association for Women in Mathematics (AWM) will award the AWM-Sadosky Research Prize in Analysis to Lillian Pierce in January 2018. Lillian Pierce is a former Bonn Junior Fellow at the Hausdorff Center for Mathematics (HCM) and now Assistant Professor at Duke University. Recently, she has been appointed as a Bonn Research Fellow, a new program at the HCM.

Established in 2012, the AWM-Sadosky Research Prize recognizes exceptional research in analysis by a woman early in her career. In 2018, it will be awarded to Lillian Pierce in recognition of her outstanding contributions to harmonic analysis and analytic number theory. Her research encompasses and connects a broad spectrum of problems ranging from character sums in number theory to singular integral operators in Euclidean spaces. She has made far-reaching contributions to the study of discrete analogs of harmonic-analytic integral operators, drawing inspiration from classical Fourier analysis, but drawing also on methods from analytic number



theory such as the circle method and Diophantine approximation.

### Bonn Research Fellows

A new program at the Hausdorff Center for Mathematics gives former members the opportunity to build upon earlier cooperation with the HCM. The Bonn Research Fellow program is aimed at selected former HCM Bonn Junior Fellows and Advanced Researchers (W2) of the Max Planck Institute for Mathematics who have moved to a foreign research institution after their tenure in Bonn. Bonn Research Fellows are appointed by the HCM Board of Directors for a duration of five years. A re-appointment is possible. During this time, the Bonn Research Fellows spend some weeks every year in Bonn and participate in teaching and research activities in the Bonn mathematics department.

## HAUSDORFF PEOPLE



In September, **Dr. Alexander Moll** joined the Hausdorff Center as a Hausdorff Postdoc and works with Prof. Dr. Patrik Ferrari. He works on the universality of fluctuations in the statistical mechanics of classical and quantum fluids in (1+1)-dimensions. His research is devoted to the role of probability theory and chaos theory in geometric quantization and semi-classical analysis. After finishing his PhD at the Massachusetts Institute of Technology, he spent a year at the Institut des Hautes Études Scientifiques near Paris before coming to Bonn.



Since August, **Dr. Yi Zhang** is a new Hausdorff Postdoc in the research group Analysis and Partial Differential Equations and works with Prof. Dr. Herbert Koch. In 2017, he did his PhD at the University of Jyväskylä in Finland, where he had previously completed his master studies. Dr. Yi Zhang is interested in analysis and geometry.



Since October, **Prof. Dr. Christoph Thiele** has been the new director of HIM (see press release above). **Stefan Hartmann** is assuming the post of scientific associate at HIM from **Dr. Christian Wegner** in addition to his work in public relations and events. At the same time, the previous trainee **Nicole Göbel** is now also employed in public relations and events.

# Annual POSTER- EXHIBITION 2017

## BIGS Poster Exhibition 2017

At the annual two-day long BIGS poster exhibition from July 6 to 7, PhD students presented their current research projects. The participants voted one of the displayed posters as the best one of the exhibition. This year's winner was Angelo Profeta (supervising professor: Prof. Dr. Karl-Theodor Sturm). On his creative poster, he explains his project in a short comic.

*To see his poster for yourself, you can download it [here](#).*



## School Week 2017

60 pupils from about 30 nearby schools took part in this year's student week from September 6 to 9 to get an impression of what it's like to study mathematics. They attended lectures by Prof. Dr. Ysette Weiss (Mainz), Prof. Dr. Rainer Kaenders, Dr. Stefan Berendonk, Prof. Dr. Stefan Hougardy, Prof. Dr. Ira Neitzel, and Dr. Michael Meier (all Bonn) and, afterwards, they were able to immediately apply their new knowledge in tutorials. This year, for the first time, the pupils could also attend workshops about programming and stochastic simulation. Dr. Thoralf Räscher conducted an orientation course for the pupils which completed the event.

## HAUSDORFF EVENTS

## Bonn Mathematics Tournament 2017

The Heinrich-Böll-Gymnasium in Troisdorf won this year's Bonn Mathematics Tournament (September 29) and took home the challenge cup. The team prevailed over about 300 other pupils from 61 different schools, a team of math teachers, and a team from the HCM (Prof. Dr. Sergio Conti, Prof. Dr. Stephan Held, Prof. Dr. Catharina Stoppel, Dr. Peter Holy, Dr. Antje Kiesel). A special highlight was the performance of the mathematical wizard and eleven-time gold medal winner in mental calculation of the Mind Sports Olympiad, Dr. Dr. Gert Mittring. The teachers who accompanied their pupils could also attend an advanced training session for teachers on "Mathematics and fischertechnik" held by apl. Prof. Dr. Thomas Püttmann.



**Hausdorff School**  
**Dispersive Equations,**  
**Solitons, and Blow-up**  
 September 4 to 8

## HAUSDORFF CALENDAR



### Summer School: Decoupling and Polynomial Methods in Analysis

October 1 to 6

### Symplectic Geometry and Representation Theory

Junior Hausdorff Trimester Program

October 2 to December 21

### Workshop: Quantum geometric and algebraic representation theory

Junior Hausdorff Trimester Program Activity

October 16 to 18

### Hausdorff Forum for Interaction with Mathematical Sciences

Jürgen Gall (Universität Bonn)

William A. P. Smith (University of York, UK)

November 3, 2:15 p.m. to 4:45 p.m.

### Descartes, Euler, Gauss: From surfaces to integers. Hirzebruch Lecture by Werner Ballmann

Hirzebruch-Lecture

November 13, 6:30 p.m. to 7:30 p.m.

### Winter School: Categorification, representation theory and symplectic geometry

Junior Hausdorff Trimester Program Activity

November 20 to 24

### GlobalMathNetwork: Opening Event

November 21 to 22

### Hausdorff Kolloquium 2017/2018

Gang Tian (Princeton)

G rard Ben Arous (Courant Institute)

November 22, 2:30 p.m.

### Workshop: Categorification, representation theory and symplectic geometry

Junior Hausdorff Trimester Program Activity

November 27 to December 1

### Pl cker Lecture 2017 by Bernd Sturmfels

December 4 to 5

### Workshop: A-infinity structures in geometry and representation theory

Junior Hausdorff Trimester Program Activity

December 4 to 8

## HAUSDORFF MIXED



## Dr. Hans Riegel-Prize

*Extract of press release of the University of Bonn (translated and slightly modified) from September 7, 2017*

On September 6, the Dr. Hans Riegel-Prizes were officially awarded. The Dr. Hans Riegel-Foundation and the University of Bonn award the Dr. Hans Riegel-Prize for the three best "Facharbeiten" (projects to introduce academic writing to pupils), which were submitted by pupils in their senior years of secondary school, in mathematics and other subjects. The application is open to all pupils of Gymnasien, Gesamtschulen and Berufskollegs in Bonn and the Rhein-Sieg-Kreis (district). Nine "Facharbeiten" were handed in on the subject of mathematics. From these, three winners were selected (see list on the right).

The judge, Dr. Thoralf Räsch, gave laudatory speeches and emphasized the outstanding achievements of the three awardees. Vanessa Nakonecnij has already dedicated herself to mathematics during the "Early Study"-project of the University of Bonn, which allows pupils from Secondary School to attend some university classes, and by taking part in several school weeks in mathematics. The rector of the University of Bonn, Prof. Dr. Michael Hoch, as well as the chairman of the foundation, Dr. Reinhard Schneider, complimented the awardees and presented the prize money.

### 1<sup>st</sup> place

**Vanessa Nakonecnij**  
*Struktur im Steinechaos – eine gruppentheoretische Beschreibung des Zauberwürfels*  
 Ernst-Moritz-Arndt-Gymnasium Bonn

### 2<sup>nd</sup> place

**Vanessa Ryborz**  
*Das  $n$ -nomiale Dreieck und ein etwas spezielles Würfelexperiment*  
 Hardtberg-Gymnasium Bonn

### 3<sup>rd</sup> place

**Sigrid Neffgen**  
*Periodische Parkettierungen und die 17 Ornamentgruppen in der islamischen Kunst*  
 Erzb. St.-Joseph-Gymnasium Rheinbach.

## IMPRINT

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