

*Knowledge Creates Diversity Creates Knowledge* 

Annual report 2018









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Research carrying the "FWF" label is associated with excellence and diversity. The reasons behind this view are many, including the highly talented researchers as well as their wide spectrum of disciplines and approaches. **Guiding principles** 

# FWF The Austrian Science Fund

"We strengthen scholarship in Austria." 3

The Austrian Science Fund (FWF) is Austria's central funding organisation for basic research.

## Mission

The FWF's mission is to support the ongoing development of basic research in Austria in line with the highest international standards. In pursuing that aim, the FWF makes a significant contribution to Austria's cultural enrichment, to its development as a knowledge-based society and thus to creating value and prosperity in the country.

# Goals

- To further improve Austria's research performance on the international stage and to increase the country's attractiveness as a research location, primarily by funding top-class research conducted by both individuals and teams, but also by helping to enhance the competitiveness of Austria's research facilities and its innovation system as a whole.
- To heighten Austria's research potential, both qualitatively and quantitatively, in line with the principle of research-based education.
- To strengthen links and foster interaction between scholarly research and all other fields of economic, social and cultural activity, and in particular to enhance the standing of basic research through concerted, long-term public relations work.

# Basic principles

#### **Excellence and competition**

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The FWF's funding activities focus on research devoted to generating fresh knowledge, the quality of which is assessed by international referees on a competitive basis.

#### Independence

Creativity in basic research requires freedom. Thanks to its legally independent status, the FWF is able to shield researchers from the direct influence of interest groups and so guarantee that freedom.

#### Internationality

The FWF is guided by the highest standards of the international academic community and supports cooperation across national borders.

#### Equal treatment of all disciplines

The FWF treats all researchers according to the same principles, neither favouring nor discriminating against particular disciplines.

#### **Transparency and fairness**

In order to ensure acceptance of its activities, the FWF is at pains to avoid conflicts of interest, to build in checks and balances at all stages of its procedures and to communicate clearly its practices and decision-making process.

#### Gender mainstreaming

Ensuring the equality of all researchers, regardless of gender, is a priority for the FWF, which it pursues through specific programmes and by practising gender mainstreaming in all areas of its work.

### **Equal opportunities**

The FWF assesses all the applications for funding it receives without regard to the applicant's position or academic title.

#### **Ethical standards**

The FWF is committed to ensuring, within its sphere of influence, that the rules of sound research practice and internationally recognised ethical standards are scrupulously observed.

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Basic research is what drives scholarship. After all, the best research is that driven by curiosity. Science is divided into hundreds of disciplines and specialist fields, and sometimes our languages are so diverse that we cannot easily express our work in words, but we can express our enthusiasm and passion for what we do.

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Leonida Fusani University of Vienna / University of Veterinary Medicine, Vienna



**Leonida Fusani** Evolutionary and behavioural biologist

projects approved

230.8

of new grants awarded (million €)

4,726

reviews received

# **The FWF 2018**

# Important figures at a glance

2,501

funding decisions

948.7

in funding requested (million €)

15,845

reviews requested



9

of new grants awarded to projects in biology and medical sciences

**39**%

of new grants awarded to projects in the natural and technical sciences

7,702

refereed publications from FWF projects

4,155

project staff members\*

21%

of new grants awarded to projects in the humanities and social sciences



of funding for publications (million €)

**92**%

of publications on open access

2,354

ongoing projects\*

13

ongoing ERA-NET projects\*

\*) as at 31 December 2018

3.7



# Austria: a research nation

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Basic research promotes a fundamental understanding of cultural, economic and social development in relation to biological factors. The opportunity to conduct essential research into the psychological processes in marginalised groups reflects the diversity within the research community and gives my work as a psychologist meaning and purpose.

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Brigitte Lueger-Schuster University of Vienna, Department of Applied Psychology

Brigitte Lueger-Schuster Applied psychologist

# **Executive Board's report**

### Focus on research

The Austrian federal government in its programme for 2017–2022 set a goal to significantly strengthen Austria's position internationally as a nation of research and innovation. To this end, an ambitious strategy is being developed, which is based on the principles of excellence and competition and is committed to open, knowledge-driven research.

### Political framework

In August 2018, an initiative to advance research, technology and innovation (RTI) was presented at the Ministerial Council by the federal ministers Heinz Faßmann (Ministry of Education, Science and Research), Margarete Schramböck (Ministry for Digital and Economic Affairs) and Norbert Hofer (Ministry for Transport, Innovation and Technology). The final draft of the Ministerial Council presentation included five plans of action, which were intended to achieve the ambitious goals set out in the government's programme. In May 2019, the initial results were presented at the first RTI summit and their implementation was discussed in detail.

The five key plans of action are:

- 1 to develop an RTI Strategy 2030, based on the findings of the OECD report
- 2 to establish an excellence initiative to further enhance and develop competitive basic research in Austria
- 3 to codify a research funding act to provide research institutions and research funding organisations with more planning reliability
- 4 to consolidate the Austrian Council for Research and Technology Development (RFTE), the Austrian Science Council (ÖWR) and the ERA Council into one central advisory body for the federal government
- 5 to create an Austria-wide database of research funding to provide a cross-agency overview of publicly financed research funding

The FWF enthusiastically welcomes the joint initiative of the three ministries. It is particularly important to pursue the following overall objectives in the long term by means of the package of measures defined in the Ministerial Council presentation, which includes

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the long-standing goal of making Austria one of the leading countries in Europe in the areas of research, education and innovation.

Another aim is to develop a research culture that welcomes competition, guarantees academic freedom and promotes excellence comparable with international standards. It is also crucial to accentuate the profile of Austrian research in general and basic research in particular, as well as to increase the level of cooperation between different disciplines and institutions. At the same time, every attempt must be made to recruit and foster the world's best and most creative minds by promoting a research-friendly environment in Austria as well as creating attractive career opportunities for outstanding young talent.

For the last 50 years, the FWF has played a major role in the combined efforts of politicians, research institutions and funding organisations to establish Austria as a nation of strong research and thus to secure the country's economic prosperity. The FWF is a pioneer in, and model for, research quality standards in Austria and actively participates in shaping both the national and European research sectors.

#### Austria helping to shape Europe

The second half of 2018 was characterised by Austria's EU Council presidency, which also cast a spotlight on research through numerous events and conferences. The news in early December 2018 of a breakthrough in the negotiations over Horizon Europe, the 9<sup>th</sup> EU Framework Programme for Research and Innovation, was received very positively by the FWF. With a planned budget of at least 100 billion euros, Horizon Europe is the largest and most significant framework funding programme in the world. In close cooperation with national efforts, not only can Europe keep up with the USA and the emerging Asian region, it can also set the tone in many areas of research and innovation.

Horizon Europe will start in 2021 and continue until 2027. The European Research Council will play a central role in supporting outstanding researchers in the field of basic research. Austria has been highly successful in receiving ERC Grants, although countries like the Netherlands, Switzerland and Israel are clearly ahead. In addition, Austria's success is concentrated among a small circle of research institutions and universities.

A strong commitment to research and research funding is needed on the national level in order to be (more) successful on the European level. As an example, in 2017, six of the seven Austrian ERC Advanced Grantees had previously been awarded FWF projects. Since 2008, 82% of all ERC Grantees have been funded by the FWF. This means that the national and European research sectors (must) complement and rely on each other. The combination of adequate and sustainable financing for the FWF and the launch of an ambitious excellence initiative can act as a springboard to international success.

### OECD recommends more competitive basic research

In December 2018, the OECD published a report commissioned by the Austrian federal government on the Austrian RTI ecosystem. The report emphasises that Austria has a huge, but as yet untapped, potential for creativity, commitment and innovation. At the same time, the OECD recommends in clear terms that Austria has to shift the focus of its research policy more towards competition, basic research and innovative research collaboration if it wants to offer researchers a more attractive environment and play in the top echelons of European research. In addition, it is recommended to expand and assure appropriate funding for structured doctoral programmes and to establish an attractive and effective tenure-track model. However, the report also highlights the significant accomplishments made by Austria in R&D over the last two decades, such as the increases in research intensity as well as the research achievements in specific scholarly fields in which Austria is among the best in the world.

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Overall, the OECD's analysis reveals how the existing research potential in Austria would benefit from more FWF funding. The report stated that "the comparatively low funding of the FWF is an impediment to excellent research". While less than one-fifth of Austrian R&D expenditure goes towards competitive basic research, it is nearly a third in Switzerland and the Netherlands—with lasting results, too. Thus, for instance, all 13 universities in the Netherlands and seven universities in Switzerland are among the top 100 in Europe. In Austria, only one of the 22 universities makes the grade.

However, it is not only a matter of more funds for the FWF but also the allocation of more funding to research institutions via the FWF. The FWF acts as a trustee for the Austrian scientific community for third-party funds awarded competitively on the basis of the highest international quality standards. The cost of the FWF's rigorous quality assurance is less than one percent of the amount of funding requested.

Last but not least, strengthening basic research and increasing the FWF's funding budget also means boosting innovation, from which companies can profit, too. A vigorous research centre with highly qualified and educated professionals makes for a prospering economic location, as numerous international (start-up) locations have demonstrated in an impressive fashion. "Excellence attracts excellence" is a saying that is true not only in research, but also in the world of business and industry.

### Excellence initiative for Austria as a research location

As part of the federal government's RTI campaign, the excellence initiative is intended to help develop a competitive research culture that fosters cuttingedge research in line with international standards and simultaneously ensures the freedom of research. Its top priorities include the long-term heightening of institutional profiles as well as closer cooperation between the different disciplines and institutions. It is a proven fact that competition-based funding increases the quality of research within the scholarly community, encourages cooperation and assures success at the international level. In this regard, the OECD report states that "the FWF should play a key role in the implementation of a research excellence initiative". At the end of 2018, Heinz Faßmann, Federal Minister for Education. Science and Research. entrusted the elaboration of a concept for this initiative to a team of experts consisting of Hannes Androsch (RFTE), Antonio Loprieno (ÖWR), Helga Nowotny (ERA Council) and Klement Tockner (FWF, speaker). The team submitted its report to the ministry in March 2019.

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In many fields, recent history has shown that basic research is essential for achieving not only real scientific, but technological breakthroughs as well. An outstanding example of this is Austria's leading role in the field of quantum technology, which is solely attributable to the freedom and opportunities afforded researchers to carry out basic research—with the result now of being considered a pioneer of this new generation of technology.

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Philip Walther University of Vienna, Quantum Optics, Quantum Nanophysics, Quantum Information

**Philip Walther** Quantum physicist

In this concept, the team recommended creating the "Emerging Fields" programme line to stimulate the innovation potential, the "Excellence Cluster" programme line to build on existing strengths and the "Austria Chairs of Excellence" programme line to make the Austrian science and research sector more attractive to outstanding international researchers. These focuses as well as the review and selection process will be elaborated in detail after the RTI Summit.

# Greater transparency in publishing

The results and knowledge gained from publicly funded research are a common good. At the same time, fifteen years have passed since the Berlin Declaration on Open Access without there being a concerted approach to open access in Europe, let alone on the global level. Though individual countries and funding organisations—like the FWF—are regarded worldwide as pioneers in the publication of research results, all too often they have had to go it alone. It is for this reason that in 2018 a consortium of now 18 member organisations—including the FWF and the European Commission—joined together to form cOAlition S and published Plan S to lay down the key principles of open access. The mission of Plan S is to create a system of scholarly publications that is more transparent, efficient and fair. More specifically, publicly funded research results are to be published in open-access journals or repositories, to which the public will have free access starting in 2020. Providing open access on the Internet to scholarly publications means that the latest evidence-based research results can circulate more rapidly and extensively and thus greatly facilitate the process of finding solutions and achieving innovations in research and society. Moreover, open access to information and knowledge is crucial for democracy.

The Austrian research institutions and the FWF are well-prepared for the implementation of Plan S. For instance, open-access publication models and repositories in all disciplines have been paid for years by the FWF, which, as the first signatory of the Berlin Declaration, has been pursuing one of the most effective open-access strategies worldwide among funding organisations for many years. In 2018, 92% of all publications listed in FWF final reports were accessible to the public. In addition, close cooperation between Austrian libraries and the FWF has led to a number of agreements with publishers, which has made it considerably easier for Austrian researchers to publish their works open access in journals and books. Now it is time to take the next step with Plan S. **Executive Board's report** 

# 50 years of cutting-edge research "made in Austria, funded by FWF"

2018 marked an anniversary for the FWF. Based on the Research Funding Act, which was passed in autumn 1967, laying the legal foundation for an independent institution for the funding of basic research, the constituent assembly of the Austrian Science Fund took place on 4 March 1968. Thus, the FWF celebrated its 50<sup>th</sup> year of existence in 2018. Piquing your curiosity: the "BE OPEN— Science & Society Festival"

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The FWF saw this anniversary as an opportunity to present cutting-edge research "made in Austria, funded by FWF" to the general public in a vivid way. The "BE OPEN-Science & Society Festival" took place during Austria's EU Council presidency in the second half of 2018 and was also the biggest researchrelated event on the council's calendar. The festival was held under the patronage of Austrian Federal President Alexander Van der Bellen, who opened the festival together with the Federal Minister of Science Heinz Faßmann. The final highlight of the five-day open-air science event was the awards ceremony for the START and Wittgenstein Awards, with the President of the German Research Foundation (DFG) Peter Strohschneider, as the keynote speaker, and the handing out of the awards by EU Commissioner Carlos Moedas as well as the General Secretary of the Ministry of Science Jakob Calice.

The festival invited the public to be curious, join in and learn more about top-class research. A crosssection of Austria's best researchers and their teams gave the public an insight into their pioneering work. More than 150 researchers in total were involved in the planning, implementation and supervision of 18 science pavilions. A mobile event hall built on Vienna's Maria Theresia Square specifically for this event was the setting for discussions on future issues facing science and society. An extensive programme for children, families and school groups offered young people the opportunity to dive into the diverse world of basic research.

With the festival, the FWF aimed to strengthen the public's confidence in science and highlight the importance of basic research. The festival successfully aroused people's curiosity in cutting-edge research, was the prelude to new collaborations with stakeholders and cast the spotlight on European cooperation. In addition to over 30,000 visitors, a total of more

than 750,000 people followed the numerous events, some of which were broadcast live from the festival on radio and TV.

### Demand for FWF funding remains high

For the years 2018–2021, the FWF has been granted a budget of 184 million euros per year, plus an additional 110 million euros of funding for the same period. This means that the multi-year plan foresees a gradual increase in budget funds up to 224 million euros per year by 2021. Furthermore, in August 2018, the FWF was able to take a first step towards lifting the restrictions imposed on applications due to budgetary constraints. Thanks to the increase in the grant budget, the number of projects for which applicants are eligible to apply has been raised from two to three, and the limitation on the maximum amount of funding that can be requested has been lifted.

In 2018, the FWF Board made funding decisions on more than 2,500 project proposals with a total of approx. 950 million euros of requested funding. This impressively demonstrates the attractiveness of FWF funding, while at the same time revealing the Austrian research community's continuously increasing need for funds (2017: 880 million euros; 2016: 790 million euros). The net administrative expenses of the FWF Office were less than one percent of the funding requested.

In 2018, a total of 684 projects were approved with a total funding amount of approx. 240 million euros. The amount of funding approved increased by 7.6 percent compared to the previous year. The approval rate for stand-alone projects (incl. clinical research), as the centrepiece of the FWF's funding portfolio, remained at the high level of around 28 percent with approx. 384 million euros of requested funding and approx. 108 million euros of new grants approved. As of 31 December 2018, there were 2,354 ongoing FWF-funded projects, with a total of 4,155 people participating in them.

In 2018, two new programmes were also implemented: Research Groups and Young Independent Researcher Groups. Both programmes provide collaboration opportunities for groups consisting of young researchers only or groups consisting of senior and junior researchers. Both programmes are open to all disciplines and aim to expand the cooperation between disciplines and research institutions. One specific goal is to bring researchers from abroad to Austria and to establish a lasting relationship between young researchers and their research institutions.

### A common Central European research area

The FWF will step up its cooperation with the emerging science nations of Central Europe in the coming years. After successfully establishing the DACH cooperation arrangement with the German Research Foundation (DFG) and the Swiss National Science Foundation (SNF), the FWF will extend its cooperation with its partner funding organisations in Poland (NCN, National Science Centre), Slovenia (ARRS, Slovenian Research Agency) and the Czech Republic (GAČR, Czech Science Foundation).

For several years now, the FWF has had a bilateral agreement with ARRS and GAČR on cross-border, closely integrated "joint projects". The next step in this expansion was taken in spring 2018 with the signing of a similar agreement with the Polish NCN. This means that starting in spring 2019, teams from Austria and Poland can also apply for joint research projects.



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Basic research means overcoming boundaries. It thrives on diversity and facilitates development. It is founded on both the setting and surpassing of limits. What is true and what is false is determined by collective decisions on the scientific credibility of the methods, conclusions and theories. To me, basic research means performing the necessary balancing act between respecting the limits within which my research work is viewed as being credible and challenging them in order to arrive at new knowledge.

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Alice Vadrot University of Vienna / University of Cambridge, UK

**Alice Vadrot** Political scientist

In addition, the four funding agencies NCN, ARRS, GAČR and FWF are planning to engage in closer and more flexible cooperation. During the FWF's BE OPEN festival in September 2018, a letter of intent was signed, thus establishing the Central European Science Partnership (CEUS). The four partner organisations agreed that researchers from the four countries would not only be eligible to apply for bilateral research projects, but trilateral ones as well. With the founding of CEUS, the FWF is attempting to meet the increasing demand for research collaboration in Central Europe and thus contribute to the further integration of the different European research systems.

# Looking ahead

The FWF's current 2019–2021 strategy defines three key areas of focus: the FWF is expanding its existing activities and planning a host of new initiatives in the area of quality assurance, in the consolidation of its funding portfolio as well as in its continuing dialogue with society. These efforts are based on the qualitydriven standards, the comprehensive international review process, the competitive awarding of grants, and the bottom-up principle—the same basic qualities that will continue to characterise the FWF's work in the future.

#### En route to being world-class

The FWF is known for quality, fairness and transparency. Its high reputation is a result of the high standards it sets for its review and selection process. The continuous improvement of the international peer-review procedure and the FWF's decision-making processes are key factors in supporting creative talents, innovative projects and successful research collaborations. In the future, the FWF will also continue to foster guality assurance throughout the entire funding process, for instance, in the areas of open science; the promotion of research integrity and ethics; the impact monitoring of programmes, projects and processes; the advancement of women and gender mainstreaming; the funding of the projects through research institutions; as well as the digitalisation of business processes. The aim of all these measures is to enhance the quality of both the funding decisions and the application processes and simultaneously to further increase efficiency.

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In the next few years, the FWF will also be revamping its funding portfolio to better serve the needs of a dynamic research community. The funding portfolio is now organised and streamlined into three programme categories: "Projects", "Careers" and "Cooperation". This applies in particular to the career development programmes and the cooperation formats and includes experimental forms of funding and innovative evaluation methods.

In addition to its programmes in the strict sense, the FWF is also developing new initiatives. For instance, the PEARL (Prospects in Entrepreneurship and Research Leadership) stakeholder initiative aims to further expand the network of connections between the FWF and economic and social organisations. The overall goal is to minimise the time between the acquisition of knowledge and its potential application. The FWF sees PEARL as an attempt to build a bridge between those who share the vision of a vigorous culture of forward-looking, cutting-edge research in Austria.

In terms of endowments, the FWF has managed to acquire funds from four private foundations with an annual distribution of approx. 1.6 million euros. The next step for the FWF is to set up its own FWF Foundation, which will open the door to more private engagement. The goal is to utilise the FWF foundation to expand the current funding instruments, facilitate new funding initiatives and to foster a cultural transformation of society towards more private involvement in internationally competitive basic research.

# The FWF as a lever for success

The FWF supports the cultivation of a competitive research culture which promotes excellence in line with international standards and ensures freedom of research. This includes accentuating the profiles of research institutions as well as fostering increased cooperation between disciplines and institutions. Competitively awarded funding increases the quality of research within the research community, encourages cooperation and thus assures success at the international level.

The long-term strengthening of the Austrian research environment is the key element of both the OECD report as well as the federal government's initiative on research excellence. It is clear to all those involved that this is the only way for a more internationally competitive research culture to flourish in Austria. The first thing that is necessary for this to happen is to consolidate the FWF basic budget at the same level as 2019, including the funds from the national foundation. The next step is for the FWF and the research institutions to elaborate uniform rules for overheads (indirect costs) in the amount of 25 percent to strengthen not only the researchers but also the institutions through quality-driven competition. To assure long-term planning reliability, a research funding act is needed that includes a stable growth path for the next five to ten years, with an increase of at least seven percent per year, so that Austria can move closer to the level of leading research countries.

For years, the FWF has been facing a growing need for funding: as a result of the new university funding model, 360 additional professorships and tenuretrack positions will be created at the universities, the CEU (Central European University) is coming to Vienna, the IST Austria is growing and the share of research is increasing at universities of applied sciences. If the FWF is no longer able to adequately fund an even greater number of excellent applications, frustrations will rise, and many top researchers will no longer stay in Austria or not even come in the first place.

The increased endowment of the National Foundation for Research, Technology and Development (NFTE), which propped up the FWF budget to the tune of 40 million euros per year in 2018 and 2019, is still having a very positive impact. The national foundation's contribution helps finance essential parts of the FWF funding portfolio. In addition, the matching funds from the federal provinces are an important instrument for funding basic research and promoting cooperation between the federal government and the provinces. This is why the FWF, together with the other beneficiaries of these financial contributions, advocates a long-term extension of the national foundation's increased endowment, which is currently guaranteed by law only until 2020.

# Shaping Austria's long-term future

The Austrian federal government has numerous supporters within and outside the scientific community on the road to successfully establishing Austria as one of the leading research countries in Europe. All the experts agree that the current window of opportunity must be seized. The FWF plays a key role in this as the funding organisation for basic and cutting-edge research in Austria. The OECD report presented at the end of 2018 underscores, independently and objectively, the importance of basic research and a strong FWF.

The federal government's rapid implementation of the research initiative will be a key, and in many respects, historic milestone for Austria's reputation as a research nation, one that will continue to have a long-lasting positive impact in the future. It is now up to the policymakers to make bold and sustainable decisions on the basis of the aforementioned clearly stated recommendations for action. Austria, as a location for research and business, will benefit significantly from these efforts and will be made fit for the future and internationally competitive for years and decades to come—with the FWF as the essential lever for success.

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# Highlights and prize winners

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The more fundamental the understanding of the sciences, the wider the funnel of consequences and the longer the way to its edge: this is not a deep insight, it follows per definition and is consistent with my own personal experience. If one takes both sides seriously—basic research and the market—then undreamedof possibilities begin to open up.



**Herbert Edelsbrunner** IST Austria



Herbert Edelsbrunner Mathematician / Computer scientist



# Wittgenstein Award winners



Walter Pohl Early Medieval History and Culture

Highlights and prize winners

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Herbert Edelsbrunner

Mathematics, computer science

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Wittgenstein Award winner



Herbert Edelsbrunner is one of the world's leading researchers in computational geometry and topology. This subdiscipline of computer science and mathematics concerns the development of algorithms to solve geometrical and topological problems and their application in various branches of engineering and the natural sciences.

Edelsbrunner has made a significant contribution to the development of computational geometry over the last few decades and played a key role in the founding of computational topology around the turn of the millennium. This new area can be regarded as the logical extension of computational geometry, but it is based on different mathematical foundations, which explains why only a few researchers work in both fields.

Drawing on the Wittgenstein Award funding, Edelsbrunner will be able to develop Vienna and Austria into a leading international research hub of computational geometry and topology. With the Wittgenstein funds, research goals can be achieved more quickly, and previously unexplored applications can be approached using topological methods. In some cases, alternative solutions will arise, with advantages and disadvantages as compared to conventional methods. In others, however, new research may open the door to undreamed-of possibilities.



Wittgenstein Award winner



# Ursula Hemetek

Minority research in ethnomusicology

Ursula Hemetek is one of the most influential participants in international debates on ethnomusicological issues. Her reputation largely stems from the role she played in the development of a new subdiscipline within her field: minority research. Her work on new approaches, methods and theories for the study of marginalised groups and their music has had a major impact on the entire field of ethnomusicology. These debates were taken to an international level through the establishment of an international study group. In 2017, Ms Hemetek was appointed Secretary General of the International Council for Traditional Music, the largest international association in this field, underlining her role as a trailblazer in ethnomusicology.

For Ursula Hemetek, ethnomusicology is a participatory science and a field that comes with social responsibility. She therefore plans to use the Wittgenstein Award funding to establish an international research centre for ethnomusicological minority research at the Vienna University of Music and Performing Arts. Researchers from different parts of the world and at different stages of their careers will be able to pursue research projects and work in their specific areas of interest at the centre, joining forces to further develop minority research in ethnomusicology and to find ways to apply their insights through social policy actions. They will thus be able to use the power of music to develop a more equitable society.

# **START** principal investigators

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#### 1996

Christian Köberl Ferenc Krausz Ulrich Schmid Peter Szmolvan Karl Unterrainer Harald Weinfurter Gerhard Woeginger Jakob

Woisetschläger

#### 1997

Gerhard Holzapfel Dieter Schmalstieg Bernhard Palme Joachim Schöberl Michael Schmid

#### 1998

Peter Grabner Gottfried Kirchengast Rudolf Valenta

# Gerhard Widmer

# 1999

Christoph Marschner Norbert J. Mauser Otmar Scherzer **Thomas Schrefl** Christoph Spötl Joseph Strauss

### 2000

Thomas Brabec Susanne Kalss **Dietrich** Leibfried Herbert Strobl Bernhard Tilg

#### 2006

Markus Arndt Hartmut Häffner Norbert Polacek Buchmeiser Piet Oliver Schmidt Wolfgang Drexler Josef Teichmann Gerald Teschl Wilfried Ellmeier Clemens Sedmak

2001

2002

Wolfgang Heiss

Michael Jursa

Georg Schett

2003

Georg Kresse

Nägerl

2004

Hanns-Christoph

Andreas Villunger

Thomas Bachner

Michael Kunzinger

Vassil Palankovski

Thomas Prohaska

Gerhard Schütz

Hintermüller

Alexandra Lusser

Zimmermann

Matthias Horn

Michael Moser

2005

Michael

Norbert

Michael

### 2007

Kathrin Breuker Thomas Bugnyar Otfried Gühne Bernhard Lamel Thomas Lörting Paul Mayrhofer Sigrid Wadauer Thomas Wallnig

# 2008

Markus Aspelmeyer Tom Battin Kaan Boztug Massimo Fornasier Julia Budka Daniel Grumiller Alexander Alexander Kendl Karel Riha Jürgen Hauer Kristin Sofia Kantorovich Tessmar-Raible Michael Kirchler Christina Waldsich Franz Schuster

# 2009

Francesca Ferlaino Ilse Fischer Arthur Kaser Manuel Kauers Thorsten Schumm David Teis



Julius Brennecke Barbara Horeis Bettina Bader Barbara Kraus Mathias Beiglböck Melanie Malzahn Alexander Grüneis Florian Schreck Sigrid Neuhauser Manuel Schabus Bojan Zagrovic Karin Schnass

2010

2011

Peter Balazs

Agata Ciabattoni

Sebastian Diehl

Thomas Müller

Alwin Köhler

Peter Rabl

Michael Sixt

2012

2013

Notburga

Stefan L. Ameres

Georgios Katsaros

Gierlinger

David A. Keays

Ovidiu Paun

Thomas Pock

Paolo Sartori

Stefan Woltran

Dammermann

Philip Walther

#### 2015

Christoph Aistleitner Ivona Brandic Marcus Huber Ben Lanvon Gareth Parkinson Rupert Seidl Kristina Stöckl Caroline Uhler

Rene Thiemann

#### 2016

Christopher Campbell Michael Eichmair Harald Grobner Felix Höflmayer Nikolai Kiesel



#### 2017

Hannes A. Fellner Vera Fischer **Clemens Heitzinger Claudine Kraft** Wolfgang Lechner Andrea Pauli Miriam Unterlass



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#### Emanuela Bianchi

Emanuela Bianchi is a physicist at the TU Wien, Vienna University of Technology. At the Institute of Theoretical Physics she works on the properties of the surfaces of materials. Her START Project Heterogeneously Charged Colloids for Material Development deals with the guestion of how to develop functional material that is capable of self-organisation.



#### **Oliver Hofmann**

Physicist Oliver Hofmann works at the Institute of Solid State Physics, Graz University of Technology. In his project MAP-DESIGN he studies the structure of materials, in particular how their components arrange themselves in relation to each other. This knowledge can be used to develop new materials based on guantum mechanical computer simulations.



Josef Norbert Füssl

As a civil engineer at Vienna Uni-

Füssl is studying the properties

versity of Technology, Josef Norbert

of wood as a construction material.

intends to use Making Wood Predict-

able through Computational Methods

as his project's title, thus contribu-

ting to the increased future use

of this natural building material.

With the START Prize funding he

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### **Philipp Haslinger**

Philipp Haslinger works at the Atomic Institute of Vienna University of Technology. With his START Project Atomic Interferometry in an Optical Resonator, the physicist wants to improve atomic interferometers, which can measure forces with the highest precision, for instance the Earth's acceleration and the phenomenon of dark energy.



### Robert R. Junker

In his project Sequential Emergence of Functional Multidiversity, Robert Junker deals with the question of how different ecosystems and their diversity of species develop. The biologist works at the Department of Biosciences, University of Salzburg. Biodiversity is essential to the preservation and sustainability of ecosystems.



#### **Gina Elaine Moseley**

Gina Elaine Moseley works at the Department of Geology, University of Innsbruck. In her Northeast Greenland Speleothem Project she is researching Northeast Greenland's climate history through sinter deposits in caves (speleothemes) up to 600,000 years old. This is one of the Arctic regions that is likely to suffer the greatest impact from climate change.



# 2018



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Social progress is unthinkable without human curiosity, or what is often known today as basic research. Of course, there is always the risk that the pursuit of knowledge sometimes leads to a dead end. The trick is to give basic research enough freedom to go in many directions, without all of them heading down the same blind alley. Not everyone who sets sail for India discovers America, as Erich Kästner put it so aptly.

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Heribert Insam University of Innsbruck, Institute of Microbiology, MCI Management Center Innsbruck

Heribert Insam Microbiologist

# Highlights

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### Expansion of the research cooperation between Austria and Israel

FWF President Klement Tockner took part in a working visit of the Austrian federal government in Israel from 9-12 June. The delegation was led by Austrian Federal Chancellor Sebastian Kurz and Minister of Science Heinz Faßmann. Direct talks between the Israeli Ministry of Science and the Austrian Federal Ministry of Education, Science and Research resulted in a memorandum of understanding, which was signed in the presence of Federal Chancellor Kurz and Israeli Prime Minister Netanjahu.





### Global Research Council: Regional Meeting in Vienna

The FWF, together with the Netherland's Organisation for Scientific Research (NWO) and Science Europe, the umbrella organisation for European research institutions, organised the European Regional Meeting of the Global Research Council in Vienna. More than 60 representatives from many European and non-European research funding organisations attended the event in mid-November.

#### **Promising year**

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At the annual FWF press conference at the end of April, FWF President Klement Tockner, together with Federal Minister of Science Heinz Faßmann, used the opportunity to look back on a successful year in 2017. At the same time, they emphasised that the federal government's ambitious programme was an important signal for basic research in Austria. In addition, they announced the "BE OPEN—Science & Society Festival", which would take place in September to commemorate the FWF's 50<sup>th</sup> anniversary.



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# Dialogue between research and society

Now in its twelfth year, the successful Am Puls series of events once again attracted a large audience in 2018. Over the course of five evenings, more than 2,000 people were able to learn about and discuss current practical applications and future possibilities of basic research "made in Austria, funded by FWF". The topics in 2018 were *Eating Dis*orders and Obesity, (De)Radicalisation, Blue Gold and Food of the Future. A report on the talks as well as video clips are published on the FWF website for each Am Puls event.

# BE OPEN— **Science & Society Festival**

With the "BE OPEN—Science & Society Festival" in Autumn 2018, the FWF opened a new chapter in its dialogue with the public and its stakeholders. With around 150 researchers, more than 30,000 visitors and collaboration with many organisations from scholarship, business, the media and society, the FWF sent out a strong and sustainable signal for international and competitive basic research in Austria.

AREA HEALE



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# Organisation and decision-making bodies

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Anybody can carry out basic research, anywhere and anytime. It can be achieved with varying budgets, and with instruments ranging from the simplest to the most sophisticated. The only preconditions are a curious mind and the desire to understand the world around us.

> **KK** Gina Elaine Moseley

University of Innsbruck, Department of Geology

Gina Elaine Moseley Geologist

# **Executive Board**

5<sup>th</sup> term (since September 2016)



President Klement Tockner

**Executive Vice-President** 

Artemis Vakianis

Vice-President Humanities and Social Sciences

**Gerlinde Mautner** Vienna University of Economics and Business Institute for English Business Communication

> Vice-President Natural and Technical Sciences

> **Gregor Weihs** University of Innsbruck Department of Experimental Physics

Vice-President Biology and Medical Sciences

Ellen Zechner University of Graz Institute of Molecular Biosciences

# 5<sup>th</sup> term (2015–2019)

**Supervisory Board** 

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#### Chair

Hans Sünkel Space Research Institute Austrian Academy of Sciences

#### **Deputy Chair**

Iris Rauskala Section VI, Austrian Federal Ministry of Education, Science and Research

#### Members

Iris Fortmann Works Council FWF

Martin Grötschel Berlin-Brandenburg Academy of Sciences and Humanities, Germany

**Gerhard Grund** business connect gmbh

Harald Katzmair FASresearch

Renate E. Meyer Vienna University of Economics and Business

Sonja Puntscher-Riekmann Salzburg Centre of European Union Studies

> Janet Ritterman Middlesex University, UK

Michaela Schmidt Salzburg Chamber of Labour

#### Consultant Members

**Reinhart Kögerler** Christian Doppler Research Association

Gertrude Tumpel-Gugerell FFG Supervisory Board

# **Assembly of Delegates**

5<sup>th</sup> term (2015–2019)

#### Chair

Josef Glössl University of Natural Resources and Life Sciences, Vienna

#### **Deputy Chair**

**Christine Bandtlow** Medical University of Innsbruck

Institution	Members	Deputies
Academy of Fine Arts Vienna	Andrea B. Braidt	Michaela Glanz
Austrian Institute of Technology GmbH	Wolfgang Knoll	Elvira Welzig
Federal Ministry for Transport, Innovation and Technology (non-university research)	<b>Wolfgang Pribyl</b> Joanneum Research	<b>Helmut Wiedenhofer</b> Joanneum Research
Danube University Krems	Friedrich Faulhammer	Viktoria Weber
Institute of Science and Technology Austria	Thomas A. Henzinger	Michael Sixt
Ludwig Boltzmann Association	Peter Mayrhofer	Jürgen Busch
Medical University of Graz	Caroline Schober-Trummler	Michael Speicher
Medical University of Innsbruck	Christine Bandtlow	Günter Weiss
Medical University of Vienna	Michaela Fritz	Michael Freissmuth
Montanuniversität Leoben	Wilfried Eichlseder	Oskar Paris
Austrian Academy of Sciences	Michael Alram	Brigitte Mazohl
Austrian Conference of Universities of Applied Sciences	Andreas Altmann	Johann Kastner
Austrian National Union of Students	Johanna Zechmeister	Andreas Potucek
Austrian Conference of Private Universities	Rudolf Mallinger	Stefan Hampl
Graz University of Technology	Horst Bischof	Gerhard Holzapfel
Vienna University of Technology	Johannes Fröhlich	Ulrike Diebold
University of Applied Arts Vienna	Alexander Damianisch	Barbara Putz-Plecko

Institution	Members	Deputies
University of Natural Resources and Life Sciences Vienna	Josef Glössl	Martin H. Gerzabek
University of Art and Design Linz	Thomas Macho	Veronika Schwediauer
University of Music and Performing Arts Graz	Gerd Grupe	
University of Music and Performing Arts Vienna	Cornelia Szabo-Knotik	Therese Kaufmann
University of Graz	Peter Scherrer	Renate Dworczak
University of Innsbruck	Ulrike Tanzer	Bernhard Fügenschuh
University of Klagenfurt	Friederike Wall	Martina Merz
Johannes Kepler University Linz	Alexander Egyed	Peter Paule
Mozarteum University Salzburg	Joachim Brügge	Julia Hinterberger
University of Salzburg	Fatima Ferreira-Briza	Albert Duschl
University of Vienna	Jean-Robert Tyran	Heinz Engl
University of Veterinary Medicine, Vienna	Otto Doblhoff-Dier	Mathias Müller
Vienna University of Economics and Business	Stefan Pichler	Harald Badinger
	Non-voting members	
FWF Executive Board	Gerlinde Mautner Klement Tockner	

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	Klement Tockner Artemis Vakianis	
	diegoi weins	
	Ellen Zechner	
Federal Ministry of Education, Science and Research	Eva Gottmann	Wolfgang Neurath
Federal Ministry for Transport, Innovation and Technology	Mario Steyer	Margit Harjung

# International START / Wittgenstein Jury

#### **Biology and Medical Sciences**

Bruce Beutler University of Texas, USA

Adrian Bird University of Edinburgh, UK

Carlo Croce Ohio State University, USA

**Christine Foyer** University of Leeds, UK

#### Humanities and Social Sciences

Peter Nijkamp University Amsterdam, NL

Peter van Dommelen Brown University, USA

Janet Wolff University of Manchester, UK

#### Natural and

**Technical Sciences** 

Christoph Beckermann The University of Iowa, USA Carlo W. J. Beenakker

Leiden University, NL

Stefan Hell Max-Planck-Institute

of Biophysical Chemistry, Germany Gitta Kutyniok

Technische Universität Berlin, Germany

# **PEEK Board**

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Darla Crispin Norwegian Academy of Music, Norway

> Sandra Kemp Imperial College, UK

Lynn Hughes Concordia University, CAN

Michael Punt University of Plymouth, UK

Anton Rey Zurich University of the Arts, Switzerland

Marc Aurel Schnabel Victoria University of Wellington, NZL

# **Equal Opportunities**

FWF bodies by gender (female/male)

Executive Board	5	3/2
Supervisory Board <sup>1</sup>	10	6/4
FWF Board BIOMED <sup>2</sup>	20	7/13
FWF Board HUMSOC <sup>2</sup>	16	8/8
FWF Board NATTEC <sup>2</sup>	20	4/16
Assembly of Delegates <sup>2</sup>	59	20/39
International START/ Wittgenstein Jury	11	3/8
PEEK Board	6	3/3
Staff <sup>3</sup>	116	76/40
Total	263	130/133

 voting members; 2) incl. deputies; excl. non-voting members; 3) incl. part-time staff and freelancers; excl. staff on parental leave and Executive Board members (as at 1 May 2019)

### $\rightarrow$

I research forgotten sources of synaesthetics, particularly from the 19<sup>th</sup> and early 20<sup>th</sup> centuries. Evaluation is carried out in cooperation with international researchers from several disciplines. That way I reconstruct hitherto unknown lines of tradition at the juncture of musicology, psychology and medicine, which means involving myself in a fascinating subject: researching synaesthetics, which offers insights into individual differences between observation and experience.

#### ~

Jörg Jewanski University of Vienna, Institute of Musicology



*Jörg Jewanski Musicologist / Synaesthetics researcher* 

# **FWF Board**

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### 5<sup>th</sup> term (2017–2020)

#### **Biology and Medical Sciences**

Discipline	Expert Advisor	Deputy
Biology I	<b>Kurt Kotrschal</b> University of Vienna	<b>Ilse Kranner</b> University of Innsbruck
Biology II	<b>Elisabeth Haring</b> Natural History Museum Vienna	Ruben Sommaruga University of Innsbruck
Genetics / Microbiology, Biotechnology / Systembiology	Ortrun Mittelsten Scheid Austrian Academy of Sciences Vienna	<b>Joachim Reidl</b> University of Graz
Cell Biology	Ludger Hengst Medical University of Innsbruck	Wilfried Ellmeier Medical University of Vienna
Biochemistry and Structural Biology	Iain B. H. Wilson University of Natural Resources and Life Sciences Vienna	Ruth Prassl Medical University of Graz
Neurobiology and Cognitive Neuroscience	Bernhard E. Flucher Medical University of Innsbruck	Claus Lamm University of Vienna
Biomedical Research I	Akos Heinemann Medical University of Graz	<b>Barbara Kofler</b> Paracelsus Private Medical University Salzburg
Biomedical Research II	<b>Maria Sibilia</b> Medical University of Vienna	<b>Till Rümenapf</b> University of Veterinary Medicine, Vienna
Clinical Research I	<b>Thomas Bauernhofer</b> Medical University of Graz	Marc-Michael Zaruba Medical University of Innsbruck
Clinical Research II	Christoph J. Binder Medical University of Vienna	<b>Elke Gizewski</b> Medical University of Innsbruck

#### **Humanities and Social Sciences**

Business and Economics	Business and Economics Sigrid Stagl Vienna University of Economics and Business	
Social Sciences I	Jessica Fortin-Rittberger University of Salzburg	<b>Ursula Kriebaum</b> University of Vienna

Social Sciences II	<b>Libora Oates-Indruchová</b> University of Graz	Tobias Greitemeyer University of Innsbruck
Philosophy, Theology and Cultural Studies	Anne Siegetsleitner University of Innsbruck	<b>Karin Harrasser</b> University of Art and Design Linz
Historical Studies	<b>Susan Zimmermann</b> Central European University	<b>Reinhard Stauber</b> University of Klagenfurt
Classical Studies	Erich Kistler University of Innsbruck	<b>Reinhard Wolters</b> University of Vienna
Literary Sciences and Linguistics	Norbert Christian Wolf University of Salzburg	<b>Ulrike Jessner-Schmid</b> University of Innsbruck
Art and Art History	Raphael Rosenberg University of Vienna	Federico Celestini University of Innsbruck

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### **Natural and Technical Sciences**

Mathematics I	<b>Josef Schicho</b> Johannes Kepler University Linz	<b>Michael Drmota</b> Vienna University of Technology
Mathematics II	Barbara Kaltenbacher University of Klagenfurt	<b>Georg Pflug</b> University of Vienna
Informatics I	<b>Silvia Miksch</b> Vienna University of Technology	<b>Ruth Breu</b> University of Innsbruck
Informatics II	Thomas Pock Graz University of Technology	<b>Bernhard Rinner</b> University of Klagenfurt
Experimental Physics	Gottfried Strasser Vienna University of Technology	<b>Peter Zeppenfeld</b> Johannes Kepler University Linz
Theoretical Physics and Astrophysics	Enrico Arrigoni Graz University of Technology	Andreas Läuchli University of Innsbruck
Inorganic Chemistry	Nicola Hüsing University of Salzburg	Erik Reimhult University of Natural Resources and Life Sciences Vienna
Organic Chemistry	Rolf Breinbauer Graz University of Technology	<b>Nuno Maulide</b> University of Vienna
Geosciences	Georg Kaser University of Innsbruck	Rainer Abart University of Vienna
Engineering Sciences	<b>Oszkár Biró</b> Graz University of Technology	Andreas Ludwig Montanuniversität Leoben

# FWF programmes

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Research is political. A diversity of researchers means a diversity of values and goals, which shape research and, in the end, our world.

Ebru Kurbak

~

University of Applied Arts Vienna

**Ebru Kurbak** Artist and designer

# Exploring new frontiers: Funding top-quality research

#### Stand-alone project funding

#### Stand-Alone Proiects

#### Objective:

 To enable researchers to carry out independent projects in basic research

#### International programmes

#### Transnational funding activities

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#### Objective:

 To enable researchers to carry out closely integrated bilateral or multilateral basic-research projects

#### Funding programmes:

- Joint projects: bi- and trilateral research projects, sometimes with a specific focus
- ERA NET calls: multilateral (European) research cooperation with a specific focus
- Joint seminars: seminar events to initiate cooperative projects

#### **Priority research programmes**

#### Special Research Programmes (SFB)

Objective: To create areas of focus for research at one or more

locations and develop extremely productive, tightly interconnected research units for long-term and interdisciplinary work on complex research topics

#### **Research Groups**

- Objectives:
  To fund cooperative projects between researchers
  - at research institutions with more limited infrastructure or in certain disciplines that cooperate on smaller scales
    To cooperate on medium-term projects (up to five
  - years) on a complex, current topic in mixed teams of 3 to 5 researchers
- To promote inter- or multidisciplinary, innovative research collaboration that explores a topic in more depth or breadth
- ► To integrate young researchers in a leadership role
- To define an internationalisation strategy for establishing a connection to the international scholarly community

#### Awards and prizes

### START Programme

- **J** -
- Objectives:
- To provide outstanding young researchers with long-term support for basic research
- To help researchers gain the qualifications necessary for leadership positions in research by developing, growing and managing their own working groups

#### Wittgenstein Award

#### Obiectives:

- To provide outstanding established researchers with long-term support for basic research
- To give those researchers maximum freedom and flexibility in pursuing their research

#### Gottfried and Vera Weiss Prize

(administered on behalf of the Dr. Gottfried and Dr. Vera Weiss Science Foundation)

#### Objective:

 To enable (young) researchers to carry out basic research in the fields of meteorology or anaesthesiology

#### netidee SCIENCE

(funded by the Internet Foundation Austria)

#### Objectives:

- To make a sustainable contribution to expanding, strengthening and preserving the benefits of the Internet for all members of society
- To support researchers from all disciplines who can help to achieve the foundation's objectives in the fields of technology, the natural sciences, business and economics, and the social sciences

#### Herzfelder Foundation Projects

(administered on behalf of the Herzfelder Family Foundation)

#### Objectives:

- To enable researchers to carry out basic research in the field of biochemical/medical cell research
- To support research into cell changes and ageing as well as the search for new means of influencing these processes

# Cultivating talents: Human resources development

#### **Doctoral programmes**

#### doc.funds

#### Objectives:

- To promote outstanding education and training for doctoral students in existing internationally oriented doctoral programmes with clearly defined structures and guality standards
- To reinforce the research orientation and sustained consolidation of existing education and training structures for highly qualified junior researchers

# Young researcher programmes

#### Young Independent

#### **Researcher Groups**

#### Objectives:

- To promote cooperation and networking among internationally outstanding young researchers through interdisciplinary research cooperation (for up to 4 years) in teams of 3 to 5 researchers
- To promote advanced interdisciplinary research into complex issues at a minimum of 2 distinct research institutions or 2 organisational units of a single institution

#### FWF programmes

### International mobility

#### Erwin Schrödinger Fellowships

#### **Objectives:**

- To help (young) researchers work on basic research at leading research institutions outside Austria
- To help researchers gain experience abroad at the post-doc stage
- To facilitate access to new fields of research, methods, procedures and techniques, so that fellows can contribute to the development of their respective fields

#### Lise Meitner Programme

#### Objectives:

- To enhance research quality at Austrian research institutions
- To increase quality levels and scholarly expertise among Austria's scientific community
- To help researchers establish international contacts and support career development

# Career development for women in research

#### Hertha Firnberg Programme

#### Objectives:

- To enable female researchers to carry out basic research
- To support female post-doc researchers early in their academic careers or on their return from maternity leave
- To enhance women's opportunities for academic careers at Austrian research institutions

#### Elise Richter Programme

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#### Objectives:

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- To enable female researchers to carry out basic research
- To support the development of women's academic careers and help them obtain the qualifications necessary for a professorship in Austria or outside the country

#### Elise Richter PEEK Programme

Objectives:

- To enable female researchers to carry out innovative arts-based research projects
- To support the development of women's academic careers and help them obtain the qualifications necessary for a professorship in Austria or outside the country

# Realising new ideas: A bridge between research and society

# Funding application-oriented basic research

#### Clinical Research Programme (KLIF)

Objectives:

- To enable researchers to carry out clinical research projects
- To generate new scholarly knowledge and insights in order to improve clinical practice
- ► To optimise diagnostic and therapeutic procedures

#### Quantum Research and Technology Programme (QFTE)

#### Objectives:

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- To promote the transfer of knowledge from basic research on quantum physics to the development and application of quantum technologies and vice versa
- To help establish highly qualified researchers in the field of applied quantum technologies
- To offer researchers a career opportunity in the business sector as an alternative to an academic career
- To provide researchers with experience working in a company

#### Funding research into the arts

Arts-Based Research Programme (PEEK)

#### Objectives:

- To enable researchers to carry out innovative arts-based research projects
- To increase awareness of arts-based research and its potential applications among a broader audience and within the research and arts communities

# Funding of publications and communication

#### **Stand-Alone Publications Programme**

#### Objective:

 To support the publication of stand-alone scholarly works in an appropriate and economical manner using conventional or digital publication formats

#### Peer-Reviewed Publications Programme

#### Objective:

To support the publication of peer-reviewed works

#### Expansions of FWF-funded projects

#### **Top Citizen Science (TCS)**

### Objectives:

- To support research activities that promote the active involvement of citizens
- To incorporate the skills, expertise, curiosity and willingness to participate of citizens

#### FWF programmes



# The FWF's activities in figures

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Turn on the light and look at things from a different perspective. Then let nature show you. I think this is what basic research is about.

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~

Muammer Ücal Medical University of Graz, Department of Neurosurgery

Muammer Ücal Neurologist

620,298,773.15

532,569,023.33

# FWF balance sheet

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#### as at 31 December 2018

(all figures in euros; not including scientific equipment)

#### Assets

Α	Fixed Assets	31 Dec. 2017	31 Dec. 2018
1.	Intangible assets	349,341.56	181,708.45
2.	Construction investment in non-owned facilities	13,882.60	48,089.57
3.	Tangible fixed assets (equipment)	161,529.70	163,841.06
••••••		524,753.86	393,639.08

#### B Current assets

Assets

#### I. Accounts receivable and other assets

1.	Accounts receivable from the BMBWF	21,650,004.85	21,650,004.85
2.	Accounts receivable from the BMVIT	811.845,00	811,845.00
3.	Accounts receivable from the National Foundation for Research, Technology and Development	48,331,847.39	104,160,191.39
4.	Accounts receivable from the EU (COFUND)	656,748.62	0.00
5.	Accounts receivable from Austrian provincial governments and other sponsors	8,296,174.90	9,977,641.45
6.	Accounts receivable from the BMWFW (approved grants for future years)	386,185,480.57	410,460,878.74
7.	Other receivables and assets	591,857.70	609,800.25
		466,523,959.03	547,670,361.68
II.	Cash on hand or at banks		
		65,421,089.26	72,128,854.93
••••••		531,945,048.29	619,799,216.61
С	Accruals and deferred items		
		99,221.18	105,917.46

# A Provisions

Liabilities

А	Provisions	31 Dec. 2017	31 Dec. 2018
•••••		1,974,105.00	2,201,321.32
В	Liabilities		
I.	Liabilities from research funding		
1.	Liabilities from research projects	510,171,829.41	545,302,545.61
2.	Contingent liabilities: International projects still open	5,742,823.99	2,348,046.94
3.	Liabilities from international agreements	193,610.00	96,805.00
4.	Liabilities to publishers	47,860.59	35,753.93
5.	Liabilities from payroll costs	292,459.33	298,226.90
		516,448,583.32	548,081,378.38
II.	Liabilities from contractual agreements		
6.	with the BMVIT	1,117,823.49	1,296,218.09
7.	with the European Union (COFUND)	133,692.65	32,490.07
8.	with the National Foundation for RTD	11,511,517.58	67,108,969.61
9.	with Austrian provincial governments	739,054.30	960,748.50
		13,502,088.02	69,398,426.27
III.	Other liabilities: office costs		
		561,953.99	562,785.18
		530,512,625.33	618,042,589.83
С	Accruals and deferred items		
		82,293.00	54,862.00
	Liabilities	532.569.023.33	620.298.773.15

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# FWF income statement

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From 1 January 2018 to 31 December 2018 (all figures in euros; not including scientific equipment)

I Revenue

1.	Revenue from research funding	2017	2018
a)	Contributions from the BMBWF	197.122.141,56	217.275.398,17
b)	Contributions from the National Foundation for RTD	16.500.000,00	75.200.000,00
c)	Other contributions	6.805.995,65	6.952.522,02
d)	Grants and donations	1.352.124,67	1.004.080,67
•••••		221.780.261,88	300.432.000,86
2.	Change of use of approved grants		
		5.280.167,26	- 56.321.789,11
3.	Revenue from unused research grants (returned f	unds)	

		8.542.844,12	7.954.771,69
4.	Other revenues		
a)	Revenues from completed research projects	1.727,86	4.722,07
b)	Reimbursements for services and other revenues from administrative activities	482.724,38	693.776,17
c)	Interest income	44.740,01	47.079,39
		529.192,25	745.577,63
	Revenues	236.132.465.51	252.810.561.07

#### II Expenses

#### 5. Expenditure for research funding

a)	Stand-Alone Projects (incl. Clinical Research)	103.726.619,14	110.995.716,01
b)	International Programmes	28.087.160,00	32.006.699,31
c)	Priority research programmes	12.694.033,28	13.822.010,18
d)	START Programme and Wittgenstein Award	8.421.156,96	10.139.791,00
e)	Doctoral Programmes	38.826.758,66	22.651.266,27

		2017	2018
f)	International mobility	16,269,644.04	19,884,610.30
g)	Career development for women researchers	10,134,356.32	14,195,556.76
h)	Young Independent Researcher Groups	—	12,990,709.40
i)	Funding arts research	3,415,875.94	4,211,949.61
j)	Open research data	2,217,690.33	18,525.35
k)	Science Communication Programme	249,633.29	582.71
1)	Funding of publications	1,706,411.18	2,158,944.48
m)	Translational Research Programme	55,104.81	28,172.66
n)	Top Citizen Science	346,524.05	226,863.57
o)	Partnership in Research	0.00	10,471.13
p)	Changes in contingent research project approvals	- 1,886,721.42	- 3,394,777.05
q)	Payroll costs (incl. research institutes)	584,245.25	597,173.38
		224,848,491.83	240,544,265.07
6.	Expenses for research support		
a)	Derived from international agreements	34,074.98	36,062.35
b)	Other	8,072.39	36,193.99
		42,147.37	72,256.34
7.	Administrative expenses		
a)	Personnel expenses	7,228,288.47	7,686,468.01
b)	Other	4,013,537.84	4,507,571.65
		11,241,826.31	12,194,039.66
	Expenses	236,132,465.51	252,810,561.07

Result for the year

73

0.00

0.00

# **Research funding overview**

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2017/2018

### Number of grants

	As appli	ssessed .cations	Ap p	proved rojects	A quo	pproval tas² (%)	Aut	horised amount	Ap	proved sums	A quo	pproval tas² (%)	·····
Programmes	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	
Stand-Alone Projects (incl. clinical research)	1,106	1,131	308	315	27.8	27.9	360.0	384.5	101.8	108.1	28.3	28.1	<ol> <li>Relates to part-projects</li> <li>The approval quota is calculated</li> </ol>
International Programmes	466	456	106	121	22.7	26.5	131.6	126.9	27.5	30.0	20.9	23.6	from new approvals of assessed applications or the relation of appro
Special Research Programmes (SFB), new applications <sup>1</sup>	33	62	7	29	5.3	10.3	13.3	26.4	3.3	13.3	4.3	11.0	full applications to concept proposa 3) 2017: incl. SFB extensions, DK new applications, doc.funds, ORI
Young Independent Researcher Groups	-	61	-	7	-	11.5	-	118.9	-	13.0	-	10.9	and WKP that were not approved in 4) Increases, extensions, completior
START Programme and Wittgenstein Award	108	105	7	8	6.5	7.6	131.1	129.9	8.3	9.9	6.3	7.6	
Doctoral Programmes (DK)—extensions	8	8	7	6	87.5	75.0	23.5	26.0	17.9	19.0	76.0	73.2	
Schrödinger Programme	146	132	53	53	36.3	40.2	18.7	17.5	7.2	7.1	38.4	40.5	
Meitner Programme	209	238	50	70	23.9	29.4	32.6	38.8	7.9	11.4	24.2	29.4	
Career Development for Women Researchers	157	174	38	51	24.2	29.3	40.5	45.3	9.6	13.4	23.7	29.6	
Programme for the Development and Understanding of the Arts (PEEK)	67	68	9	11	13.4	16.2	25.1	25.2	3.4	4.1	13.5	16.5	
Top Citizen Science	18	10	7	5	38.9	50.0	0.8	0.5	0.3	0.2	4.5	47.1	
European Groupings of Territorial Cooperation (EGTCs)	38	56	2	8	5.3	14.3	4.9	8.8	0.3	1.3	5.8	14.3	
Total <sup>3</sup>	2,493	2,501	642	684	25.5	26.7	879.4	948.7	217.3	230.8	22.4	22.1	Total of new approvals
Women Men	822 1,671	858 1,643	181 461	243 441	21.9 27.4	27.8 26.1	260.5 619.0	318.6 630.1	56.7 160.6	75.5 155.3	19.8 23.4	21.9 22.3	
									5.3	8.6			Supplementary approvals <sup>4</sup>
									222.6	239.5			Total approvals
SFB: submitted proposals / full applications approved	19	29	1	3	-	-	76.4	120.3	3.3	13.3	-	-	

.....

Grant totals (€ million)

-projects uota is calculated als of assessed e relation of approved o concept proposals extensions, ons, doc.funds, ORD e not approved in 2018 nsions, completion funding Funding development

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#### Share **PEEK / Top Citizen Science / EVTZ** of funded 5.6 2.4% **START Programme and** Wittgenstein Award programmes 9.9 4.3% (€ million) **Career Development** for Women Researchers Stand-Alone Projects (incl. 13.4 5.8% clinical research) 108 46.8% Schrödinger/Meitner 18.5 8.0% SFB Young Independent **Researcher Groups Doctoral Programmes International Programmes** 45.3 30.0 13.0% 19.6%

# Research staff funded by the FWF

77

In 2018 4,155 people working in research were funded by the FWF. More than half of these are young researchers aged between 26 and 35. The figures underline the importance of the FWF as a supporter of young talent and prove its commitment to the development of scientific human capital in Austria. As at 31 December 2018

2017		Women	Men	
Other staff		374	279	653
Doctoral students		855	1,153	2,008
Postdocs		562	855	1,417
Total		1,791	2,287	4,078

2018	Women	Men	
Other staff	383	<mark>2</mark> 79	662
Doctoral students	894	1,136	2,030
Postdocs	617	846	1,463
Total	1,894	2,261	4,155



# >>

Space exploration is basic research. Every space mission is based on an inseparable trio of theory, in-situ measurements and laboratory experiments. The theory gives impetus to the measurements, which take place in a complex environment. The measurements and the theory cannot be reconciled until the parameters measured are isolated in a laboratory, thus closing the chain. The Institute for Space Research is the only institution in Austria that develops and builds measuring instruments for use in space and carries out a scientific analysis and physical interpretation of the data obtained.

### 

Günter Kargl Austrian Academy of Sciences (ÖAW), Institute for Space Resea<mark>rc</mark>h

> **Günter Kargl** Space explorer / Physicist

2014 2015 2016 2017 2018





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**Medical University** of Vienna

13.1 5.5

5.1

2.3

6.0

University of Salzburg

7.7

University of Veterinary

Medicine. Vienna

2.3

6.7







Graz University of Technology



**Total new grants:** 

**University research** 

institutes

(acc. §6 Abs. 1 UG 2002; in € million)



**University of Natural Resources** and Life Sciences. Vienna





Medical University of Innsbruck



0.0 0.0 0.0 0.1 0.0 **University Mozarteum** Salzburg

# **Total new grants:** Non-university and other research institutes

(in € million)



Institute of Science and Technology Austria—IST Austria

4.4 5.8

9.7 12.2



of Sciences

\*also includes research institutes and scholarship holders abroad



# **Matching funds**

Number of projects / Total grants (€ million)





# **Open Access**

The FWF has for many years pursued one of the world's most effective open access strategies among funding organisations. In 2018 92% of all quality-assured publications listed in final FWF project reports were openly accessible.

# Peer-reviewed publications

#### 2018

 7,094 = 92%
 Open Access

 608 = 8%
 No Open Access

 7,702
 Total

#### 2017

5,771 = 90%	Open Access
668 = 10%	No Open Access
6,439	Total

# Publication funding

2018	Mio.€		
Stand-Alone Publications	0.5		
Peer-Reviewed Publications	3.3		
> Hybrid Open Access	2.4		
> Gold Open Access	0.8		
<ul> <li>Other publication costs</li> </ul>	0.1		
Fotal	3.8		
of which Open Access	3.7		

#### 2016

4,726 = 92%	Open Access
420 = 8%	No Open Access
5,146	Total

#### The FWF's activities in figures



# Grants by scientific discipline

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Total of new grants (€ million)







85

### **Humanities** and Social Sciences

2017	2018	2017	2018	
4.0%	3.5%	2.5%	3.4%	
8.8	8.0	5.5	7.8	
Lingui	stics and	Art and A	rt Historv	
Literatu	re Studies			
2017	2018	2017	2018	
3.7%	2.9%	1.7%	2.6%	
8.1	6.8	3.8	6.0	
His	story,	Socio	ology	
Archa	eology		•••	
		2017	2018	
2017	2018	8.1%	6.5%	
2.7%	2.4%			
5.8	5.6	17.7	15.0	
Philo	osophy,	Oth	ner*	
Ethics,	Theology			
2017	2018	*		
6.8 (3.1%)	4.3 (1.9%)	Business and Eco	onomics	
2.8 (1.3%)	3.7 (1.6%)	Psychology		
0.5 (0.2%)	2.1 (0.9%)	Other Social Scie	nces	
3.8 (1.8%)	1.4 (0.6%)	Other Humanities	5	
0.9 (0.4%)	1.3 (0.6%)	Political Sciences	3	
0.6 (0.3%)	1.0 (0.4%)	Human Geograph	ıy, Regional	
		Geography, Spati	al Planning	
0.3 (0.2%)	0.6 (0.3%)	Educational Scien	nces	
1.0 (0.4%)	0.4 (0.2%)	Media and		
10 (0 5%)	0.1 (-0.1%)	Logal Sciences	sciences	
1.0 (0.5%)	0.1 (<0.1%)	Legal Sciences		



# >>

The meaning of the word 'basic research' varies considerably within the individual disciplines, but no matter whether humanities or the natural sciences, it requires the foundation that scholarship provides. In ethnomusicology, 'basic research' means, among other things, constantly discovering new worlds of music that we must learn to understand by means of a very specific method, which includes field research, analysis, transcription and theoretical contextualisation. Only then is it possible to develop an application-oriented approach which can have an impact on society.

> Ursula Hemetek University of Music and Performing Arts Vienna, Department of Folk Music Research and Ethnomusicology

**Ursula Hemetek** Folk music researcher / Ethnomusicologist

1 Malta

# Reviews received by country

In 2018 the FWF assessed 2,501 applications amounting to a total of 948.7 million euros. 15,845 review applications led to a total of 4,726 reviews from 69 countries and regions, and funding decisions were made based on these.

1,401 USA 630 Germany 555 Great Britain



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ed 216 Italy 207 France 199 Canada 173 Australia 147 Netherlands 146 Switzerland 126 Spain 91 Sweden 68 Belgium

- Beigium
- 65 Japan60 Denmark
- 55 Norway
- 51 Finland
- 51 China

#### Share of reviews by region (%)

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	2018	2017	2016	2015	2014
Rest of EU	36.4	37.8	36.1	36.4	33.7
USA/Canada	33.9	34.2	34.7	34.5	35.4
Germany/Switzerland	16.4	17.1	15.9	16.5	16.9
Rest of world	13.3	11.0	13.4	12.1	12.5



# International programmes

Invested FWF funds 2018 (€ million)



# **International mobility 2018**

The FWF supports successful young researchers on their way to scientific independence with the Schrödinger and Meitner mobility programmes. In 2018 53 young postdocs from Austria carried out research in 17 countries worldwide. In return, 70 international young researchers worked at Austrian research institutes.

# Lise Meitner grantees

Countries of origin

Germany (12), Italy (8), Spain (6), Austria (5), France (4), China (3), Hungary (3), Netherlands (3), Russia (2), Brazil (2), Switzerland (2), Israel (2), Greece (2), Japan (2), Vietnam (2), Ukraine (1), Slovakia (1), Uzbekistan (1), USA (1), Australia (1), Iran (1), Finland (1), Bulgaria (1), Pakistan (1), Lithuania (1), Poland (1), Portugal (1)



# **Erwin Schrödinger fellows**

Destination countries

USA (11,75), Germany (9,25), Netherlands (5), Switzerland (5), France (5), UK (3), Spain (2), Australia (2), Italy (2), Finland (1), Israel (1), Belgium (1), Denmark (1), Hungary (1), Poland (1), Canada (1), Sweden (1)



# **ERC grants** by guest country since 2007

Top 20 countries, listed by grants per million residents\*

\*(a) without Advanced Grants 2017; host country means the country of the host institution who supplied the recommendation at the time of application; (b) in regard to Synergy Grants only the host country of the project coordinator is taken into account. Sources: (1) Grants: European Research Council (ERC). https://erc.europa.eu/projects-figures/erc-funded-projects; (2) Residents: CIA World Factbook, July 2016, https://www.cia.gov/library/publications/the-world-factbook

	Country	Residents	Approved project	Grants (per million res.)
1	Switzerland	8,179,294	55	2 <b>67.5</b>
2	Israel	8,174,527	45	B 56.0
3	Netherlands	17,016,967	72	<b>42.3</b>
4	Sweden	9,880,604	27	9 28.2
5	Denmark	5,593,785	15	7 28.1
6	UK	64,430,428	1.71	3 26.6
7	Belgium	11,409,077	28	4 24.9
8	Austria	8,711,770	21	5 24.8
9	Finland	5,498,211	13	3 24.2
10	Ireland	4,952,473	8	7 17.6
11	France	66,836,154	1.01	5 15.2
12	Germany	80,722,792	1.20	7 15.0
13	Iceland	335,878		5 <b>14.9</b>
14	Luxembourg	582,291		3 13.7
15	Norway	5,265,158	7	1 13.5
16	Cyprus	1,205,575	1	5 12.4
17	Spain	48,563,476	48	2 <b>9.9</b>
18	Italy	62,007,540	45	3 <b>7.3</b>
19	Portugal	10,833,816	7	3 7.2
20	Hungary	9,874,784	5	9 6.0

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# **Bibliometric** data on the top 20 countries 2007-2017

\*Sources: (1) "The Essential Science Indicators" was updated on 11 January 2018 and covers a timespan of ten years plus ten months: 1 January 2007 to 31 October 2017. The data are updated six times per year. (2) Most-cited publications = top 1% of publications in the discipline concerned (3) Population Data: CIA World Factbook, July 2016, https://www.cia.gov/library/publications/the-world-factbook

#### Ranked by citation per 1,000 residents\*

	per 1,000 res	sidents* Publications	Citations	Residents (in thousands)	Citation (per publication)	Most-cited publications (%)	Publications (per 1,000 res.)	Citations (per 1,000 res.)
1	Switzerland	275,758	5,740,872	8,179	20.8	2.7	33.7	701.9
2	Iceland	9,570	218,109	335	22.8	3.1	28.6	651.1
3	Denmark	158,029	3,009,480	5,593	19.0	2.5	28.3	538.1
4	Sweden	249,887	4,400,234	9,880	17.6	2.0	25.3	445.4
5	Netherlands	375,258	7,429,543	17,016	19.8	2.4	22.1	436.6
6	Finland	122,184	2,018,243	5,498	16.5	1.8	22.2	367.1
7	Norway	119,204	1,903,337	5,265	16.0	2.0	22.6	361.5
8	Australia	528,217	8,062,350	22,992	15.3	1.9	23.0	350.7
9	Singapore	115,112	1,990,453	5,781	17.3	2.4	19.9	344.3
10	UK	1.178,160	21,636,450	64,430	18.4	2.2	18.3	335.8
11	Belgium	206,829	3,696,815	11,409	17.9	2.2	18.1	324.0
12	Canada	647,121	10,707,336	35,362	16.5	1.8	18.3	302.8
13	New Zealand	87,996	1,289,398	4,474	14.7	1.7	19.7	288.2
14	Austria	142,567	2,354,472	8,711	16.5	2.0	16.4	270.3
15	Ireland	77,142	1,321,148	4,952	17.1	2.1	15.6	266.8
16	Israel	138,431	2,163,412	8,174	15.6	1.6	16.9	264.7
17	USA	3,943,369	71,236,512	323,995	18.1	1.8	12.2	219.9
18	Germany	1,043,512	17,430,200	80,722	16.7	1.7	12.9	215.9
19	Slovenia	38,478	415,180	1,978	10.8	1.1	19.5	209.9
20	Luxembourg	8,214	104,800	583	12.8	1.9	14.1	179.8

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