

New Ways to Promote Talent

Annual Meeting of the Max Planck Society focuses on junior scientists



A ceremonial setting: Max Planck President Martin Stratmann speaks during the Plenary Assembly in the Kaisersaal in Erfurt.

search, confirmed his ministry's intention to promote the networks.

The Annual Meeting began with the presentation of the Stifterverband Science Prize. Peter H. Seeberger, Director at the Max Planck Institute of Colloids and Interfaces, received the award and the accompanying cash prize of 50,000 euros for his pioneering work on automated sugar synthesis. In addition, outstanding junior scientists were presented with awards including the Otto Hahn Medal, which recognizes outstanding scientific achievement by doctoral students.

In the meeting of the Max Planck Senate, Rüdiger Willems was confirmed as the new Secretary General of the Max Planck Society. The lawyer has held the office on a provisional basis since February 2017 and previously served as Deputy Secretary General for more than ten years.

To attract the best international talent, you need an enticing offer and high visibility – as Max Planck President Martin Stratmann discussed in his closing speech at the 68th Annual Meeting, held in late June in Erfurt, Jena and Weimar. One central issue

was the Max Planck Schools: interregional research and education networks established in collaboration with the German Rectors' Conference and other partners. In his address, Georg Schütte, State Secretary in the Federal Ministry for Education and Re-

Flowering Research

“Jugend forscht” – The Max Planck Society congratulates young researchers

The most talented participants in Germany's “Jugend forscht” initiative were honored at a ceremony held in Erlangen in May. The Max Planck Society has donated the prize in the physics category for some time now. Gerd Leuchs, Director at the Max Planck Institute for the Science of Light, presented the first prize in this year's national competition to three elementary school students from Berlin. Matthias Grützner, Julian Egbert and Arne Geipel jointly uncovered a surprising phenomenon: when a jet of water encounters a coarse surface, such as a wooden board, regular spiral-shaped patterns can form that are reminiscent of a sunflower's disc florets. The 16-year-olds found an explanation for this in the minute protrusions in the rough surface, which break up the running water and thus form the pattern. The three pupils tested their theory using an experiment in which they allowed water to fall onto a nail and then recorded the flow with a camera. The results confirmed their tentative explanation. The jury praised the resourceful and intelligent manner in which the young researchers investigated the phenomenon they had uncovered – and the fact that they independently reached a theoretical description.



Proud winners: Matthias Grützner, Julian Egbert and Arne Geipel (from left) receive their “Jugend forscht” certificates from Max Planck Director Gerd Leuchs.

“The euro project has failed”

Fritz W. Scharpf, Director Emeritus at the Max Planck Institute for the Study of Societies in Cologne, strongly criticizes the monetary union

Mr. Scharpf, your criticism of the European Monetary Union attacks its very foundation. Has the euro project failed?

Fritz W. Scharpf: In its current form, yes. A technical system was constructed by which currencies were equalized. However, nothing was done to develop citizens' political identification with the monetary union.

Does the problem lie in the fact that there is no European identity? Or did we start from the wrong end?

We started from the wrong end. The monetary union is a case of economic over-integration. A European identity could develop if Europe does something that both the member states and their voters want. Or if there is pressure from outside – consider, for example, Trump, the Ukraine or the Middle East. After the Second World War, we resolved that we would never take up arms against each other again. Instead, we wanted to reinforce and enhance Europe in all its diversity.

What role do citizens play?

In Greece, Portugal and Italy, there is currently a suppressed rebellion against the restraints of the monetary union. And in the countries of the economic North, at least a part of the population is frustrated about the risks of bailout loans, as well as the lack of gratitude and reliability of the countries to be saved. But this conflict can't be resolved, as there is no democratic basis for dealing with these issues at the European level.

There are signs of progress. But is completely changing a country's path a legitimate approach?

The Greek economy has shrunk by a quarter; at the same time, though, its export ratio has grown by more than a third. That was the plan. And if such a restructuring ultimately succeeds, it is hoped that others can grow in the same export-oriented manner. In this respect, to answer the second part of your question, this has been a foolhardy experiment in social engineering, but it can be justified.

Are there actually any other options? Would it be an option to say: okay, this or that country has to leave the euro?

The most economically prudent option would actually be for Germany to leave the euro. That's because Germany is the largest and most competitive economy in Europe, and because this fact is rooted in a historically and geographically unique situation, especially since German reunification. Problems could be combated more easily in a monetary union without such an overpowering national economy. But of course Germany is the very last country that would unilaterally renege on its loyalty to European integration. Europe wouldn't be able to cope with that.

So, what now?

I would consider it sensible to introduce rules now to enable a two-level monetary system to come about – in due course and without acute pressure so that, if it came down to it, the chaos option wouldn't be the only choice, and so that a controlled transition to a better structure would be possible.

What might that look like?

One structure would be the countries that, together with Germany, form a highly competitive economic system in the current monetary union. This includes the old “Deutschmark block” that existed before the monetary union, namely Germany, Austria, the Netherlands, Denmark and Finland. Since then, the Baltic member states have joined. This would be a hard currency group based on the German model that could integrate much better and would also function much better. For the other part, a backup structure already exists: the Exchange Rate Mechanism II ...

... which emerged from the European Monetary System that Helmut Schmidt and Giscard d'Estaing created in 1979. Is it still in keeping with the times?

It still exists. The member states cooperated in defining their exchange rates and supported one another when they came under international pressure. If there were



Fritz W. Scharpf

long-term differences in their competitiveness, then the currencies were revalued or devalued. Today, a decision on support for foreign exchange markets would be made by the European Central Bank.

The strong countries return to the safety of community, with all of its opportunities and benefits, and the less strong countries would enjoy the flexibility of exchange rates. Is that a Europe with two speeds – or two classes?

The members of Exchange Rate Mechanism II enjoy not only flexibility but also protection against speculation on capital markets and the risk of inflation or devaluation spirals. But identification with Europe would be institutionally supported in both groups of countries: they would be in the EU. This block would still have a strong communal presence on global finance markets, so Europe would likely hold greater sway in the world – as Norway and Switzerland might also consider accession. In fact, all of Europe could find its place in a more broadly defined monetary union.

Interview: Martin Tschechne

Global Movement for Science

At more than 600 locations worldwide, people took to the streets for the “March for Science”

On April 22, researchers, students and citizens around the world took part in the “March for Science” to support science and its role in politics and society. According to the or-



ganizers, the focus at the demonstrations in Germany was on promoting the “value of science, facts and evidence-based conduct in an age of alternative facts.” Max Planck scientists also participated, helping with planning in the organizational team, distributing flyers, giving speeches or marching. Demonstrations were held in more than 20 cities in Germany, in many cases with active participation of local Max Planck Institutes. Indeed, leading Max Planck scientists, including Nobel Prize laureates, spoke out in support of the “March for Science” in Berlin.

In his speech at the demonstration in Munich, Max Planck President Martin Stratmann warned that scientific freedom was coming under increasing pressure internationally. “We cannot accept that, in times when people are changing this planet on a scale never seen before, decisions are made without due consideration of scientific facts,” Stratmann said. “We must not act dumber than we are.”

Creative protest: At the “March for Science” in Munich, scientists from the Max Planck Institute for Ornithology advocated intelligent actions with an umbrella reading “Let it Brain.”

Impressive Ceremony to Mark Centenary

Japanese research organization RIKEN celebrates 100th birthday

Five research campuses and some 2,000 scientists, primarily in the fields of physics, chemistry, and life and computer sciences make up RIKEN Japan’s leading organization for basic research. While the Max Planck Society also covers the human sciences, both organizations focus on research at the frontiers of knowledge – and enjoy a close relationship, thanks in no small part to decades of collaborative endeavors. Martin Stratmann emphasized this in Tokyo, where he was the only international representative among the 600 invited guests to be asked to give a brief congratulatory speech on the occasion of the research organization’s 100th birthday.

Their Imperial Majesties Emperor Akihito and Empress Michiko personally attended the ceremony, while further prominent speakers included two Nobel Prize laureates – particle physicist Takaaki Kajita and stem cell researcher Shinya Yamanaka – both of whom gave commemorative speeches. During his trip, Stratmann also held discussions with various people on deepening scientific cooperation, including the President of RIKEN, Hiroshi Matsumoto, and the President of the University of Tokyo, Makoto Gonokami. There were also meetings between scientists from both countries. These included the opportunity for Stratmann to meet with nearly 20 Max Planck alumni.



At the evening reception for the 100th anniversary celebrations: Martin Stratmann (right) was invited to perform *kagami-biraki* – the traditional ceremony for breaking open a sake barrel. Also pictured are RIKEN President Matsumoto (left) and Science Minister Tsuruho.

Photos: Amac Garbe/MPC (top), RIKEN (bottom)

Center for Systems Biology Opened

Joint venture of the Max Planck Society and the Technische Universität Dresden seeks to unravel cellular processes

It's a delicate balance: molecules arrange themselves to become cells, cells form networks to make tissue and tissues form organs. This process occurs only in the correct spatial arrangement and chronological sequence. At the Center for Systems Biology Dresden, a joint venture of the Max Planck Institute of Molecular Cell Biology and Genetics, the Max Planck Institute for the Physics of Complex Systems and the Technische Universität Dresden, researchers seek to understand how cells synchronize with one another to form tissue with a specific size, form and function.

At the Center's opening in May, speakers included the Minister President of Saxony, Stanislaw Tillich, and Max Planck President Martin Stratmann. The guest of honor was American biochemist and entrepreneur Craig Venter, who played a significant role in decoding the human genome. The Center for Systems Biology Dresden brings theoretical and practical specialists together in one location. Following the startup phase, around 120 scientists will conduct research at the facility. The Center is headed by Max Planck Directors Gene Myers and Frank Jülicher, as well as Ivo Sbalzarini from the TU Dresden.



Prominent guest: Biotech pioneer Craig Venter at the opening of the Center for Systems Biology Dresden.

On the Net



Science on Board

From Bonn to Straubing: The exhibition ship *MS Wissenschaft* has set sail once again. After dropping anchor in more than 30 towns and cities across northern Germany during the past year, the current route will take it along rivers and canals in the south of the country and into Austria. Visitors to the exhibition in the ship's hold can travel even much further: to mudflats, tropical coral reefs, the deep sea and the polar sea. With more than 30 different exhibits, the exhibition offers insights into ongoing research projects, including initiatives by three Max Planck Institutes. <https://ms-wissenschaft.de/english>

Neural Network Goes Grunge

Artificial intelligence aficionados Ivan Yamshchikov and Aleksei Tikhonov from the Max Planck Institute for Mathematics in the Sciences have recently published a mini-album. In their musical endeavour, the programmers enlisted a rather unusual songwriter: the lyrics of all four songs were written by an artificial neural network trained to resemble Nirvana vocalist Kurt Cobain. The vocals were recorded by Rob Carroll, a musician from New York. You can check out the AI-created verse in a YouTube video created by the researchers; the song is called "In the Back of Your Glass." <http://bit.ly/2rWEVJP>

Secrets of Fish Schooling

Collective behavior is embodied in swarms of insects, flocks of birds, herds of antelope and schools of fish. Studying this behavior in schools of fish has been incredibly challenging, because the cues that drive it occur at lightning speed, come from multiple directions and sources, and of course because all of it takes place underwater. Iain Couzin and his colleagues at the Max Planck Institute for Ornithology at the University of Konstanz are using new observation techniques and technologies – including high-speed video, motion-tracking software and advanced statistical modeling – to reveal the mysterious mechanics of schooling fish. www.biographic.com/posts/sto/lens-of-time-secrets-of-schooling