

Award-winning!

2019 Leibniz Prizes for three Max Planck scientists



Women of influence at the Max Planck Society: Leibniz Prize winners Melina Schuh, Ayelet Shachar and Brenda Schulman (left to right).

This year, no less than three Max Planck scientists are being awarded Germany's most prestigious research prize: Melina Schuh, Ayelet Shachar and Brenda Schulman will be formally presented with the Gottfried Wilhelm Leibniz Prize, endowed with up to EUR 2.5 million, on March 13, 2019 in Berlin.

Melina Schuh is being awarded this prize for her vital work on reproductive biology. The Director of the Max Planck Institute of Biophysical Chemistry in Goettingen has contributed crucial insights into how a mature, fertilizable egg cell forms and what the consequences are when errors occur during this sensitive process. The recent Leibniz Prize winner explained to the FRANKFURTER ALLGEMEINE ZEITUNG (FAZ) how her research helped women who wished to have children. The FAZ also devoted an article to the work of Ayelet Shachar, Director at the Max Planck Institute for the Studies of Religious and Ethnic Diversity in Goettingen, under the title "The rights of displaced persons". Schachar's multidisciplinary work on citizenship and legal framework conditions in multicultural societies has made her one of the leading experts in this field. Brenda Schulman, Director at the Max Planck Institute of Biochemistry in Martinsried, is being awarded this prize for her work on the molecular mechanisms of the ubiquitin system, focusing in particular on their biochemistry and structural biology. Any faulty regulation in this system can lead to numerous functional disorders such as cancer or neurodegenerative diseases.

Recognition for achievements in protein research

Franz-Ulrich Hartl receives the Paul Ehrlich and Ludwig Darmstaedter Prize 2019

This year, two scientists are to receive this special award for their pioneering research into protein folding: Franz-Ulrich Hartl, Director at the Max Planck Institute of Biochemistry in Munich, will be sharing the prize with his U.S. colleague Arthur L. Horwich from Yale School of Medicine and the Howard Hughes Medical Institute. The prize, which is endowed with the sum of EUR 120,000, will be presented to the researchers on March 14, 2019 at the Paulskirche in Frankfurt. Hartl and Horwich have proven that the proteins in all organisms are folded by means of a complex, energy-consuming process which is dependent on helpers known as "chaperones". This work is also highly significant for the medical field, as incorrectly folded, agglutinated proteins are a significant characteris-



tic of many neurodegenerative diseases such as Alzheimer's and Parkinson's. Better understanding of this protein

folding malfunction could therefore open up new approaches to treating these diseases.

“At the mercy of a future with no alternatives”

Lisa Suckert investigates the motives behind the Brexit campaign



Lisa Suckert

Since the referendum of 2016 in which the British people voted to leave the European Union, the nation has been fighting over its future. Lisa Suckert from the Max Planck Institute for the Study of Societies in Cologne has been analyzing the Brexit campaign. In the sociologist's view, this is a good example of how ideas about the future shape a society – an example from which the EU can draw a number of important conclusions.

Ms. Suckert, the Brexit vote was a shock for Europe. Have the British fallen prey to a new form of nationalism?

Lisa Suckert: We have to be careful not to pigeonhole the people who voted to leave the EU. We are quick to call them “nationalists”, “stupid racists” and “die-hards” with no understanding of economic relations who are afraid of anything foreign. Migration was of course one of the most important issues, and parts of the “Leave” campaign were clearly xenophobic. However, putting everything down to radicalism is oversimplifying the situation. We need to take a closer look.

In what respect?

Brexit supporters cover a wide spectrum from the far right to the far left and criticize the EU from very different perspectives. For some, the European Union is a neoliberal enemy, which is too business-friendly and concerned only with free markets. Others think that the EU has too

much power over the economy and want to leave the EU so that Britain can at last have truly free markets. Some of the people who voted “leave” want to restrict migration and return to times of greater national sovereignty. In contrast, others believe that the EU treats refugees poorly and inhumanely. Once out of the EU, they could do things better. These are strongly contradictory opinions that cannot be reconciled rationally.

So what do Brexit supporters actually want?

For many, the present is highly complex – this is probably true of more countries than Britain. People have the impression that they no longer have any decision-making power over their own lives, that there are no alternatives for their future. The desire for greater sovereignty, to regain control, to have clear borders – all this played a dominant role in the campaign. This has more to do with longing for a time and a world that was supposedly safer and happier. For many, this means the golden age of the British Empire and later of the Commonwealth. This past is used as inspiration.

Didn't the people think about what the consequences of their vote would be?

In 2016, many people did indeed vote without thinking through the consequences of leaving the EU. Around 70 percent of the people who voted for Brexit believed that the outcome of the referendum would not make a significant difference, i.e. that not much would change whatever happened. If the British do end up with a hard Brexit, this may turn out to have been an error of judgment in terms of economic policy.

The British had a referendum on leaving the EU once before, in 1975. However, two-thirds of the voters elected to remain. Which arguments were used back then?

They were very similar to those used today. Great Britain dreamed of resuming its status as a global power. By contrast, EU supporters wanted to actively influence the future project of Europe. The overall mood was more optimistic. Both sides asked themselves how it might be possible to

create a better future inside or outside the EU. In 2016, both the “Leave” and the “Remain” campaigns were concerned with avoiding risks and hazards.

So did people have different ideas of the future back in the 1970s?

Not really in terms of content, but there was a different underlying mood. The future was presented as open, as something that could be influenced. For a society, it is of central importance how its members envisage the future. If they feel that there is no scope for shaping the future, many things will come to a standstill.

What might a “better” future for the British look like nowadays?

That's difficult to say; at the moment, the situation is muddled. The country is deeply divided. In the long term, the British have to find a way to reconcile these contradictory needs, i.e. to participate in globalization while maintaining a certain level of seclusion and control over their own economic area.

How can the EU react to this?

It could help find a solution by making changes. More and more people are becoming dissatisfied with the EU. It has been concentrating almost exclusively on the economy and the free market for far too long. This has not been very convincing so far, at least not as far as European integration is concerned. Perhaps it should soft-pedal economic integration and pay much more attention to social standards and European culture. It would also be worth taking another close look at the needs that influenced the Brexit supporters' decision so that the EU learns from this event.

Interview: Martin Roos

Fathoming the oceans

Bremen-based start-up wins European founder's award

"95 percent of the ocean floor is as yet unexplored," says Hannah Brocke. The biologist and her colleagues Guy Rigot, Joost den Haan and Raja Kandukuri want to change this. The four

scientists have set up PlanBlue, a start-up originating from the Max Planck Institute for Marine Microbiology in Bremen. Their vision: to survey the entire ocean floor and address important

problems facing humanity. The effects of climate change could then for example be tracked by observing changes in coral reefs. Measurements can be taken under water using a special hyperspectral camera. The technology for this was developed at the Max Planck Institute for Marine Microbiology, and PlanBlue has turned it into a new, user-friendly product. The camera scans sea, lake and river beds automatically. It can be used by any experienced diver – not just by experts. In all, PlanBlue's technology is faster, more accurate and cheaper than other methods used to explore underwater terrain to date.

The new business model is already celebrating its first successes in December 2018, PlanBlue won the Galileo Masters, a European start-up competition for the aerospace industry that distinguishes ideas associated with the European navigation system of the same name. PlanBlue uses Galileo to locate the data on the map after collection.



Surveying the submarine world: divers can map the ocean floor using a special camera developed by Max Planck researchers.

Measles viruses for cancer therapy

Max Planck Innovation enters into licensing agreement with Themis Bioscience

As the pathogens that cause influenza, herpes, measles or smallpox, viruses are actually our enemies. However, they can be surprisingly helpful when treating cancer. This is because cancer cells are highly susceptible to infection by viruses, which can destroy them extremely efficiently. Scientists call this process "oncolysis". The Vienna-based biotech company Themis Bioscience has now been licensed to develop, manufacture and market treatments based on an oncolytic measles virus platform. The licensed technology was developed by the Max

Planck Institute of Biochemistry in Martinsried in cooperation with the Eberhard Karls University of Tuebingen. It uses a modified measles virus based on the genome sequence of the established measles strain with which billions of people have been vaccinated worldwide. These oncolytic measles viruses will in future destroy cancer cells more efficiently, thereby stimulating and strengthening the cancer patient's previously underactive immune system. In ideal conditions, all tumors will be brought permanently under the control of the immune system.

A victory for Open Access

Agreement concluded by DEAL and Wiley

In January, after almost three years of negotiations, Project DEAL, a consortium representing approximately 700 academic institutions in Germany, finally signed an initial agreement: the consortium has agreed to enter into a groundbreaking national partnership with U.S. publisher John Wiley & Sons, one of the world's leading publishing companies in the field of research and teaching. For an annual fee, the newly concluded three-year agreement grants all institutions represented by Project DEAL access to the scientific journals published by Wiley as far back as 1997. Researchers at these institutions can also publish their articles in Wiley's journals as Open Access publications. The Max Planck Society – as a member of the alliance of German science organizations behind the Project DEAL consortium – established the company Max Planck Digital Library Services GmbH to facilitate the signing of the agreement by Project DEAL and Wiley. Public access to the agreement is now available (also refer to page 76f.).



Signing the agreement: Guido Herrmann, Managing Director of Wiley, and Frank Sander, Managing Director at Max Planck Digital Library Services GmbH.

On the net



Shining a spotlight on our devices and our researchers

In our more than 80 Max Planck Institutes, the Max Planck Society offers its researchers access to often very specialized equipment and machines. To illustrate our hidden equipment treasures, ranging from gravitational wave detectors over lasers, cell sorters and vacuum chambers to 30-m single dish telescopes, we have started a social media campaign under the hashtag #mymachineandme, aimed at shining a spotlight on our research infrastructure and the early career researchers working with it. The photographs can be found on Instagram and Facebook accounts as well as on Twitter:

www.instagram.com/maxplanckgesellschaft

<https://bit.ly/2FYRTIP>

Self-help for traumatized refugees

About 20 to 30 per cent of refugees suffer from major depression or a pronounced post-traumatic stress disorder and are in need of treatment. Psychiatric care of refugees in Germany needs to be optimized. The Max Planck Institute of Psychiatry wants to contribute to this process. Within the 'RefPsych project', part of the initiative "People for People", it has produced two short films, each available in 13 different languages, for refugees and helpers explaining possible somatic and mental symptoms which can occur after flight and migration. The second, most recent video, "Flight and Trauma - Self Help" explains how refugees can, in a first step, help themselves: https://youtu.be/R_kP-qLhKok

Open letter on green genetic engineering

98 leading research institutions have signed an open letter to Jean-Claude Juncker, President of the EU Commission, expressing concern about restrictions on the use of CRISPR Cas9 technology in plant cultivation. Unlike in the past, however, foreign genetic material is no longer transplanted into soy or potatoes. And what's more, the plant varieties cultivated in the laboratory could just as well have been grown naturally – by means of natural mutation or conventional crossbreeding. The open letter, which was composed in English, is signed by several Max Planck Institutes and can be viewed by clicking on the following link: <https://sciencebusiness.net/news/scientists-urge-new-eu-rules-gene-editing-crops>