

# High Tech at a Lofty Height

A 325-meter-high climate research tower is being built in the Amazon rainforest



The tower is growing – its construction is being coordinated by Jürgen Kesselmeier from the MPI for Chemistry (left) and his Brazilian counterpart Antonio O. Manzi.

Construction of the steel structure, which will be taller than the Eiffel Tower, is set for completion in early summer. Scientists from the MPI for Chemistry are closely involved in its development and will also coordinate the research there.

When Jürgen Kesselmeier wants to travel to the building site of the Amazonian Tall Tower Observatory (ATTO), he faces a day and a half's journey from the Brazilian metropolis of Manaus. He starts out by car, heading north, then turns east to the Balbina Dam, continuing along the Uatumã River. Following a boat trip, the final leg of the journey is made by jeep down a jungle track. "Apart from the measurement station with two smaller 80-meter-high towers, there is nothing here but forest," says the project leader from the MPI for Chemistry in Mainz.

Now the ATTO is being added to the location. Since the laying of the foundation stone in August 2014, the tower has already reached a height of

270 meters. Construction will continue when the rainy season is over, and the gigantic structure is due to be inaugurated in June 2015. Behind the work of the builders, technicians and scientists lies a logistical feat that could be achieved only through their concerted efforts. For example, a Brazilian company transported the steel struts over land and river to the protected area and provided around 30 workers. They alternated in three-week shifts at the site, sleeping on hammocks in the camp near the tower, complete with its own kitchen, shower and WCs.

Technicians and scientists from the National Institute of Research in the Amazon (INPA), the Universidade do Estado do Amazonas and the MPI for Chemistry will equip the gigantic structure with sensors, probes and pumps. Air will be sucked in from different levels and the proportion of aerosols it contains will be measured. The scientists also plan to study the processes involved in the transport of air masses – processes that take place over several hundred kilometers. "We want to understand where and why greenhouse gases such as carbon dioxide, methane, nitrous oxide and other reactive trace gases form and accumulate," explains Kesselmeier, whose team includes ten MPI staff members. He fondly recalls the first time he climbed to a height of 120 meters to take lunch to three colleagues. "I'm not exactly unafraid of heights, but there were plenty of places on the structure that provided a secure hold," he explains. Moreover, his efforts were rewarded with a "magnificent view." Nevertheless, Kesselmeier has a lot of respect for those who work at this height. He isn't yet sure whether he will climb the 325 meters to the top of the tower, but he definitely wants to give it a try.

It isn't just the height that makes the ATTO so special. Climate measurement stations already exist at 800 meters, on the roofs of skyscrapers in

## Open Access Needs the Young Generation

Dubai. What is unique about ATTO is the valuable ecosystem in which the scientists take their measurements: It is the largest continuous forest area on Earth, and it is constantly shrinking due to such operations as slash-and-burn clearing and the expansion of soya plantations. As a CO<sub>2</sub> sink and freshwater reservoir, the Amazon rainforest has a huge influence on global weather, and it is enormously rich in species diversity.

The cost of constructing the measurement tower is around 8.4 million euros, which is being funded approximately equally by the German Federal Ministry of Education and Research and the Brazilian partners. However, the cost and effort are worth it, as Kesselmeier firmly believes that the ATTO will help answer questions about climate change and complement established climate models. It is said that around 390 billion trees still stand in the world's largest tropical forest. ATTO will tower above them all.

The Max Planck Society offers junior scientists targeted seminars on free scientific research knowledge, and sponsors the world's largest specialist conference.

More research findings in Open Access journals – since the Berlin Declaration in 2003, this desire is increasingly becoming a reality, also in the Max Planck Society. This became evident, for instance, at the Open Access Week 2014 events.

In the transition to freely available research findings, particularly junior scientists in the Max Planck Society play a special role. After all, they face considerable pressure to publish in highly respected journals in order to advance their career opportunities.

To this end, the Max Planck Digital Library and PhDnet initiated the "Open Access Ambassadors" format, a network of ambassadors for free research knowledge. The first researchers just embarking on their careers arrived at the MPI of Psychiatry in early December to meet with leading Open Access advocates. There, more than 60 Max Planck doctoral students, postdocs and group leaders learned a lot not only about the advantages of digital Open Access journals,

such as short and transparent review processes, but also about how they can promote the expansion of the Open Access concept at their institutes.

The trend is also becoming noticeable worldwide: "In a changing culture, the old guard is sometimes reluctant to make room for a new generation. In the Open Access movement, it's different. Here, the old ones are hungry for you to climb the throne!" – these were the words with which co-founder and Chairman of the Board of PLoS, Patrick Brown, opened OpenCon 2014, the largest Open Access conference for junior scientists from all over the world. With financial support from numerous Open Access journals and research institutions, including the Max Planck Society, they assembled in mid-November for a two-day conference in Washington, DC.

### Further information:

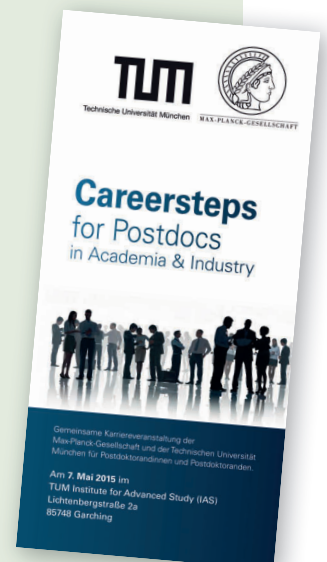
<http://openaccess.mpg.de/2365/en>  
[www.opencon2014.org](http://www.opencon2014.org)

## Career Conference for Postdocs in Garching



The Max Planck Society and the Technische Universität München (TUM) have committed themselves to actively fostering post-doctorate career paths. Postdocs from Munich are invited to attend the joint conference "Careersteps for Postdocs in Academia and Industry" on May 7, where they can learn about the diverse array of professional prospects within the context of practical workshops. The opening lecture will be held by Ijad Madisch (pictured left), co-founder and CEO of ResearchGate. A further highlight is a podium discussion with top-class representatives from the political, scientific and business arenas. The conference will take place at the TUM Institute for Advanced Study in Garching.

 [www.mpg.de/career/careersteps](http://www.mpg.de/career/careersteps)



# Science Is International and Colorful

Researchers in Saxony advocate tolerance and cultural coexistence

In view of the marches by members of Pegida (from the German acronym for “Patriotic Europeans against the Islamization of the West”) in Dresden and Legida in Leipzig, scientists at Max Planck Institutes in Saxony are taking a stand for tolerance and cultural openness. President Martin Stratmann supports these initiatives, as he made clear at a meeting with Saxony’s Minister President Stanislaw Tillich.

People are laughing, and later dancing in time to feel-good brass-band music. Science is having fun, science is fun – this is what the two-minute video clip conveys. And more importantly: science is at home in Dresden, with researchers from all over the world whose work is also important for the economy, and thus for the entire region. That’s the message spoken by American biochemist Elly Tanaka in a close-up shot, and then she likewise states in German: “We’re sure that the majority wants a culturally open and colorful Dresden.”

In the video, this is simultaneously the cue to join the group dance: dozens of scientists in white lab coats hop around, waving their national flags. Whether USA, Spain, Croatia, India, Egypt, Iran – no one counted them, but the diversity of flags is impressive.

The clip is now available on YouTube. It was recorded by the Public Outreach team at the MPI of Molecular Cell Biology and Genetics (MPI-CBG), but for the big tolerance event in late January in Dresden. Not only some 250 artists – including Herbert Grönemeyer, Sarah Connor and Adel Tawil – but also citizens took to the stage to speak out before more than 22,000 people. Among the speakers were Kai Simons, Founding Director Emeritus of the MPI-CBG. And to underpin his message, this video clip was shown – in which, incidentally, scientists not only from this MPI, but also from other Dresden-based research institutions also played a part. “We



Group dance kickoff: Elly Tanaka (right) is already moving; in the next sequence of the video clip, her colleagues are dancing, too.

wanted to make it very clear that Dresden is cosmopolitan and that, as scientists, we need this cosmopolitan atmosphere,” says Simons.

Even if the administrations of other MPIS are reluctant to take such a public stance on the Pegida and Legida demonstrations, everyone is concerned that Saxony’s good reputation as an internationally established location for science could suffer in the long term. Furthermore, in letters to the President of the MPG, scientists also cautioned against a change in the cultural climate. Against this backdrop, in early February, Martin Stratmann met with Minister President Stanislaw Tillich in Dresden. “It is disastrous if, in view of the latest developments in Dresden and Leipzig, employees are inhibited in moving around the city, or are even afraid,” said Stratmann during this meeting. He stressed that, “Minorities like the international scientists and their guests must be certain of the particular support of the state government.” Tillich emphasized: “We firmly oppose those who incite and stir up public opinion against foreigners. Dialogue is needed for Saxony

to be able to continue its positive development, as is a climate of openness and tolerance. This is important for science, too.”

The two agreed to stay in contact and to initiate specific measures – actively involving the local institutes. Stratmann further highlighted that he “supports all initiatives in politics and society aimed at peaceful coexistence of cultures, and at tolerance and openness.” He additionally pointed out that the MPI in Saxony has, independently of the current polarization, for years been engaged in encouraging practical communication and coexistence. This may take the form of open house days or school projects like at the MPI for Evolutionary Anthropology in Leipzig, or that of the MPI-CBG. International doctoral students at the institute in Dresden then address students – in German and English – under the motto “Science Goes to School” and show how they work: the DNA extraction from bananas that was also featured at the recent container festival is popular there, as well.

 The video: [www.mpg.de/weltoffen](http://www.mpg.de/weltoffen)