

# Show of unity

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Since its first meeting in Stockholm in 2004, the EuroScience Open Forum has established itself as comfortably the largest and most important multidisciplinary science meeting in Europe. The biennial conference is an unequalled opportunity for senior investigators, junior scientists, students, policymakers and science journalists to come together and exchange ideas.

ESOF 2016 marked the conference's first appearance in the UK, held in Manchester in late July. It took place against a backdrop of Britain's vote on 23 June to leave the European Union. The repercussions of the vote permeated every policy discussion at the meeting.

But, perhaps unexpectedly, it also infused the event with fresh energy: a determination on the part of scientists from the UK and elsewhere that the dream of a genuine European Research Area will never die.

In this context, EU research and innovation commissioner Carlos Moedas delivered an impressive speech (*see page 2*) in which he spoke with genuine passion about the roles that open access and open data will play in the development of European science. He also reflected on the growing role of Europe—including the UK—as part of a Global Research Area; an approach mirrored in wider discussions on global disease responses, science diplomacy and the UN's Sustainable Development Goals.

Some of the biggest EU policy news of the conference was on the future of Horizon 2020 and the development of science advice (*see page 3*). The science agenda also developed apace throughout the event, with topics such as personalised medicine, big data and astrophysics topping the bill. Given Manchester's billing as the home of graphene, a whole afternoon was dedicated to the 2D material (*see page 4*).

ESOF's long-standing careers track provided original discussions on responsible research, social media and the place and prospects of early-career researchers (*see page 5*).

And the organisers experimented with novel session formats including 'fishbowl' sessions, Pecha Kucha presentations, PI with the Prof, and speed-dating for researchers. As evident from ESOF organiser Luke Georghiou's hectic diary (*see page 7*), there was never a dull moment.

We're biased, perhaps, as the editor of *Research Europe* sat on the programme committee for the event. But we think that the city of Manchester did a great job of hosting the conference, and that the programme provided a superb snapshot of European research policy. It also featured an unusually high proportion of excellent contributions—from academics, university leaders, students and policymakers—including many that, for reasons of space, are not included in this brief retrospective.

*Research Europe* maintained a lively and well-received presence on Twitter, as well as providing free news coverage of events as they unfolded, which was available at [www.researchresearch.com/news](http://www.researchresearch.com/news). We also had a stand in the exhibit area, and would like to thank the many readers and contributors who dropped by to say hello.

For us, the take-home message from the meeting was that the development of a genuine European research community continues with momentum, regardless of the aftermath of the Brexit vote. We already look forward with great anticipation to ESOF 2018. That event will be hosted in Toulouse, the home of Airbus, which, like ESOF, is exemplary of what Europe can achieve when it puts its best foot forward.

## brexit

# UK researchers seek post-Brexit path

## Fear of leadership vacuum as Moedas outshines Johnson

**BREXIT DOMINATED DISCUSSIONS** across the board at ESOF 2016 in Manchester, as attendees based in and outside the UK sought clarity on how to move on from the outcome of the referendum on the UK's membership of the EU.

A vibrant discussion that opened the closing day of the conference highlighted a clear split in the attitudes of senior figures in UK research on whether to accept the vote to leave the EU, or fight to reverse it.

As tensions ran high, significant frustration was directed at the UK science minister Jo Johnson, who was roundly criticised for his poor performance on the opening day, while EU research commissioner Carlos Moedas appeared to have galvanised researchers with his impassioned rhetoric and commitment to the event.

Against this backdrop, attendees were showered with evidence of Brexit's impact, with conversations in sessions and corridors dominated by the issue of what life could be like if the UK breaks from the European project.

**AS LATECOMERS SETTLED DOWN** for the headline session on 27 July, Stephen Curry asked a simple question: "Should we fight, or should we acquiesce?" This input from the Imperial College London biologist divided attendees for the subsequent 75-minute debate.

Panelist Jürgen Maier—UK chief executive of the German engineering company Siemens—sought to move on from the referendum itself. "All of that is history," he said. Speaking of the uncertainty that reversing or ignoring the vote would bring, Maier pleaded with scientists to accept it and take the lead in negotiating the best deal possible outside the EU. "We need to be positive, and push very hard for a clear commitment for R&D," he said. "I believe in the phrase, 'Don't waste a crisis.'"

Despite his conviction, Maier failed to address a myriad of questions that follow if the outcome is accepted, including the position of Scotland in the UK and the uncertainty of life after Article 50 is triggered.

"I agree we must look to the positive, but I don't agree with the idea that Brexit means Brexit," said Luke Georghiou, vice-president of research and innovation at the University of Manchester. "Parliament created the referendum and has the power to negate it. And as a citizen, that is what I believe we should do."

Anne Glover, former chief scientific adviser to the European Commission president, was a compelling presence on the panel. "Could we get full membership

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of Horizon 2020, and in return agree to free movement of scientists?" she asked. Amid soul-searching over the divide between academics and the public that emerged in the referendum campaign, several voices argued that special treatment for scientists would exacerbate this. "There is a risk that comes across as elitist," said Curry.

But Maier said mobility for scientists was "an obvious place to start", and that a deal that reflects free movement for work—rather than free movement of labour—was a likely outcome. "Unfortunately there has to be some restriction, given the vote that has taken place."

Forty-eight hours before this Brexit debate, EU research commissioner Carlos Moedas had taken the stage in the Exchange Hall to deliver the opening plenary. "The current lack of public and political engagement in fact-based decision-making has people asking if we have entered a post-factual era of democracy," he said. "People feel science and politics have left them behind."

Yet Moedas' rather inspirational analysis contrasted sharply with the speech that followed from the UK's science minister Jo Johnson. "The EU is not the only game in town," Johnson told the European audience. "The UK will continue to play a leading role in major non-EU research collaborations." Amid anger that Johnson had failed to take questions from the conference or attend more sessions, private mutterings grew into outspoken criticism. "I didn't understand why our minister was so disengaged," said Glover. "We need leadership, but we have a vacuum in the UK and we are being paralysed by uncertainty."

**ELSEWHERE AT THE MEETING**, Iain Mattaj, director of the European Molecular Biology Laboratory, said that the lab's European Bioinformatics Institute in Cambridge had struggled to recruit since the vote, with four job offers declined. "In the few weeks since the vote we've had almost no applications from non-UK EU citizens."

Graphene researchers spoke of their fears for EU funding collaborations, and officials talked of the UK's loss of voice in policymaking on the continent.

But attendees also took the opportunity to assert that scientific collaboration will continue, Brexit or no Brexit. "We must work as hard as possible to make sure the European Research Area will include our British friends," the Euroscience president Lauritz Holm-Nielsen said.

## policy in brief

### **Commission pushes forward open data**

Horizon 2020 will require research data to be made openly available by default from now on, EU research commissioner Carlos Moedas announced in Monday's plenary. The European Commission will also tackle responsible research by asking 2017 grant recipients to respect principles including honesty, objectivity and care for future generations in their contracts.

### **Synergy Grants back on ERC agenda**

European Research Council president Jean-Pierre Bourguignon said that the council's interdisciplinary Synergy Grants, which make multimillion-euro awards to senior researchers, would probably be reintroduced in 2018 and 2019. During the conference, the Commission announced that it was upping the ERC's budget to €1.8bn in 2017, while the ERC published an impact report that found a fifth of grants led to a "major scientific breakthrough".

### **Fear of science eclipsing humanities...**

Social sciences and humanities are suffering from reduced profile in universities around the world, as students opt for the natural sciences, a Wednesday session heard. Student choices were driven in part by the attraction of projects such as the Human Genome Project and the International Space Station, attendees said. SSH researchers outlined efforts to promote international, large-scale projects, such as the Clarin database, in an attempt to revitalise their fields.

### **...and first social science winners celebrated**

The 2016 European Young Researchers Awards for postdoctoral researchers were awarded to Marta Entradas of the Centre for Socioeconomic and Territorial Studies in Lisbon for her research into scientific communications; and to Martijn Wieling of the University of Groningen for his studies of quantitative variations in language acquisition.

### **Societal Challenge pillar under fire**

EuroScience and the Initiative for Science in Europe presented commissioner Moedas with a statement calling for the Societal Challenges pillar of Horizon 2020 to support more basic research. Identifying a goal for projects, rather than expected outcomes, and leaving it to researchers to determine how that goal should be reached would be "the best way to encourage novel approaches and innovation", the groups said.

### **Not all industry advice is 'tainted', EU told**

The UK's chief scientist Mark Walport warned against the dangers of relying solely on academic opinion in policymaking. His statement followed a presentation by Sierd Cloetingh, president of Academia Europaea, on the Science Advice for Policy by European Academies initiative. "It's a big mistake to think that anyone associated with industry is tainted," said Walport.

### **Personalised medicine needs to refocus on patients**

The field of personalised medicine is more likely to progress if emphasis shifts from drug development to simple diagnostics and patient tools, participants at a Monday session heard. Gael Yvert, a cell biologist at Ecole Normale Supérieure de Lyon, said that there had been a huge focus on genomics to date, but that disease prediction was still poor. Evidence-based models, technology integration and patient empowerment are much more important, said Mark Kroese, deputy director of the PHG Foundation, a health policy think tank.

## research

# Advisers debate impact models

Researchers, organisations and lobbyists are failing to demonstrate the full value of research to policymakers, a session at ESOF 2016 heard on 26 July.

One big problem is that established economic models fail to reflect all the benefits of research, said Luc Soete, rector of Maastricht University. There is “much more” than measures of GDP can capture, he said, and models also neglect that rates of return on investment vary a lot between countries. “It’s extremely difficult to show the value of research at the national level,” he said.

Academics remain opposed to the use of impact criteria in funding decisions, in part because of concern for areas with social rather than financial benefits, the session heard. “We haven’t dared to introduce impact criteria, although we’re working on changing researchers’ mindset,” said Marja Makarow, vice-president for research at the Academy of Finland. “We ask them to describe impact, but we haven’t had the courage to include a formal score.”

But as issues such as security and immigration rise up the political agenda, research funding is being squeezed out of national budgets, ESOF was told. “We have to embrace the idea that we need to justify our existence,” said Mark Ferguson, chief scientific adviser to the Irish government. “If we continue to object to economic value

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as a legitimate measure, we will not get the level of funding for science that the opportunities demand.”

Ferguson called for more communication around projects that offer clear financial gain. “Telling stories about projects that create considerable economic impact will drag along with them the large number that don’t,” he said. He also suggested that funders switch to a metrics-based approach to gain traction with policymakers.

Soete, who advises the European Commission on research policy, said that he was working on financial models based on the concept of blockchain—the shared ledger model behind the digital currency bitcoin—to allow a better record of research’s contribution to innovation.

Meanwhile, Mu Rongping, director of the Institute of Policy and Management at the Chinese Academy of Sciences, suggested that impact be considered using a “development” agenda, covering benefits such as openness or environmental progress as well as innovation. Mu called for more nuance in the debate, given the different meanings of impact to scientists, organisations and policymakers. “Very often research is valued on outcome. In practice, the process of research is also very valuable.”

## Scientists stick by graphene’s commercial potential

Leading graphene researchers told the ESOF 2016 audience that they believed the commercialisation of graphene products would meet public expectations, acknowledging the strong pressure for the technology to deliver.

Graphene, a 2D material derived from graphite, was isolated by University of Manchester physicists Andre Geim and Konstantin Novoselov in 2004. Speaking at the conference, Geim said that market uptake of the material was happening at a much faster rate than for other materials, such as silicon, discovered in the past two centuries.

“We are at the beginning of the era of 2D materials,” said Geim, stating that developments such as graphene-coated LED light bulbs show that the field is progressing. “This is not an exaggeration—everybody who is working in this area acknowledges it.”

At ESOF, speakers highlighted a lack of interest among scientists in the use of their discoveries—a sentiment Geim admitted to sharing. “I personally hate graphene, I have had enough of this material,” he said during a lunchtime interview in the plenary hall. “But it is part of my toolbox as a scientist, and part of the toolbox of industry as well.”

UK scientists feel great pressure to make graphene a commercial success, Novoselov said, partly because they pushed for the creation of the National Graphene Institute

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in Manchester in 2013, which cost £61 million (€72m).

UK government inquiries this year have raised questions over graphene’s commercial progress, identifying problems with quality control in production and a lack of standardisation. And Raymond Gibbs, chief executive of Haydale Graphene Industries, based in south Wales, said that these were still problems. “Standardisation is crucial for Europe to win the race globally,” he told a session on 26 July.

In March, an investigation by *The Sunday Times* found that nearly half of graphene-related patents had been filed in China, and just 1 per cent in the UK. “China is a strong competitor. We need to learn how to live with them and how to collaborate in what we can,” Novoselov said.

Following the Brexit vote, researchers said that it would be vital for the UK to retain its participation in the Graphene Flagship, the €1-billion research programme funded through Horizon 2020. “We have to wait and see what happens,” Gibbs said. “There are no plans to change anything at this phase.”

But Novoselov said that Brexit had dealt “a big blow” to possible sources of finance for graphene research. “We will have to learn to live in this new reality,” he said.

## Young researchers demand fuller answers

The frustrations of early-career researchers in Europe and beyond became evident at a session organised to allow their associations to outline their ideas.

At the early-morning event on the third day of the conference, early-career academics presented the Bratislava Declaration for Young Researchers, which calls for changes to funding, career structure and working conditions. But the debate quickly became heated as those in the audience vocalised their frustration at the lack of progress, and the inability of researchers to come up with concrete proposals for action.

"The issues are always the same and have been for decades," said Thomas Schäfer, a chemical engineer at the Polymat institute at the University of the Basque Country. "These declarations are useful, because they draw attention to the problems. But they manifest a situation that hasn't changed in the last 20 years."

"The issue is trying to find solutions—and these can't come from the top," Schäfer said. "You have to change things from the root of the system." Another young researcher in the audience challenged the panel: "Everyone at this conference knows about these issues. You have to come up with ideas."

One problem raised was that the associations must coordinate their efforts to have a bigger impact, but the same solutions are not relevant for researchers in all countries. There is also a need to widen the scope from a simple European declaration, others said. "Over time,

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the bulk of young researchers will come from Africa and Asia—it's simple demographics," said Imraan Patel, a programme manager at the South African Department of Science and Technology. "So even if you can fix the problems in Europe you won't solve the problems overall."

Patel, one of the few senior officials in the room, suggested that young researchers find a way to get more exposure. "Think about how you can get into the policy process in a central way; and to present not at a side session at ESOF, but in the main plenaries." Ángeles Rodríguez-Peña, president of COST, a Brussels-based science networking organisation, suggested presenting a positive vision for the future of science in Europe, as well as outlining the problems.

But Lynn Kamerlin—a computational biochemist at Uppsala University in Sweden and vice-chairwoman of the Young Academy of Europe—said that the Bratislava declaration had been carefully constructed to stimulate real political change. For instance, its authors avoided mentioning pensions, she said, because the European Commission has a well-developed pensions initiative and so wouldn't be open to advice in that area.

Calling on those present to take the declaration to each of their national science ministries, Kamerlin said: "At the moment in the Commission there is a really strong drive to help young researchers."

### careers in brief

#### Twitter perceived as too risky

A survey presented by the UK's University of Aberdeen found that only 47 per cent of scientists use social media for professional purposes, and that established researchers were more engaged online than PhD students. Even though younger researchers have grown up with social media, they reported fears that a mistake online could damage their career advancement.

#### Amazon laments skills shortage

A lack of graduates in science, technology and engineering was described as the "single biggest limit" to the growth of the cloud computing branch of Amazon, by Brendan Bouffler, head of scientific computing at Amazon. The problem is even more acute in public research institutions, where salaries are lower, said Alison Kennedy, director of the UK's Hartree Centre, which provides research services to industry.

#### Early-career researchers urged to think long term

PhD students and postdocs were advised to start planning for their future early on, and consider discussing their longer-term priorities with their supervisors. "The

postdoc by its nature is a temporary role," said Naoimh O'Connor, research careers manager at University College Dublin in Ireland. It is important to have a strategy for getting to where you want to be in 5 years' time, she said, which includes life goals, as well as career goals.

#### Time to give credit to peer reviewers

Bernd Pulverer, head of publishing at the European Molecular Biology Organization, said that including refereeing activity in research assessment would raise the status of peer review and reduce the influence of metrics. Pulverer said that he was sceptical about the value of quantitative measures of research quality, and that a researcher's review activity should be considered because of its fundamental role in academia.

#### Panels address gender balance

Female researchers remain seriously disadvantaged in obtaining senior academic positions, and subconscious discrimination remains widespread, one session heard. Mentoring and improvements to science education were among the solutions discussed. Virginie Orgogozo of the Institut Jacques Monod in France even suggested research needed to be made less competitive, to help women.

## outlook

# Spotlight on reproducibility in science

Problems with reproducing the findings of biomedical research began to receive widespread attention in 2012, when the pharmaceutical company Amgen announced that it had been unable to reproduce the findings of 47 out of 53 “landmark” cancer papers.

Similar studies followed, said Anton Ussi, operations director at the European Infrastructure for Translational Medicine in the Netherlands, during a session on 27 July. “None have shown that 50 per cent or more of the findings tested were reproducible.”

The previous day, the journal *Scientific Reports* published a paper showing “striking” variation in a single batch of MCF-7 cells, which have been used as a model for cancer research for over 40 years, contributing to almost 23,000 papers. The authors concluded that standard cell authentication processes might not detect variability “that could fundamentally compromise reproducibility”.

Speaking in Manchester, the paper’s senior author Thomas Hartung—a toxicologist at Johns Hopkins Bloomberg School of Public Health in the United States and University of Konstanz in Germany—said that 92 per cent of clinical trials failed to produce effective treatments, partly because preclinical researchers are working with tools that are far from perfect. “A lot has to do with non-standardisation of methods and a lack of quality control,” he said.

On the bright side, newer disease models based on patients’ own tissues are due to deliver a “paradigm change” in the quality assurance of cells, Hartung said.

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An international collaboration on Good Cell Culture Practice, to bring together funders and research organisations, was formally launched by Hartung and his colleagues during the ESOF conference.

The session that Ussi chaired covered many other potential causes of non-reproducibility, including the pressure on researchers to publish, a lack of statistical knowledge, the inaccessibility of raw data for re-testing and a failure to sufficiently flag up flawed papers.

Justin Bryans, director of drug discovery at the technology arm of the UK’s Medical Research Council, said that between 60 and 70 per cent of his team’s attempts to advance basic research “fail because the hypothesis is wrong”.

He said that funders have “a huge role to play” in improving biomedical reproducibility. “They have the ability to stipulate what academics should do in terms of quality control. We need to change the behaviour of academics,” he said.

Frances Rawle, head of governance and policy at the MRC, agreed that funders could help improve peer review, emphasise the importance of methodology and pay for statistical support and good data management. However, she said that the MRC was not considering funding replication studies at the moment. Rawle said that she was “having trouble convincing her colleagues that, given the pressures on other funding, it would be a good use of their money”.

## top quotes

### Political science

Sociologist Sheila Jasanoff tells delegates not to forget about the relationship between research and democracy: “Hand in hand with celebrating global science goes an obligation to think in terms of what being a truly enlightened global citizen, in the era of rising scientific and technological intensity, in our societies ought to be.”

### Save the environment

Pavel Exner, the vice president of the European Research Council, talks frankly about the balance of power between the European Commission and the ERC executive agency: “The environment makes the relationship complicated, and it will need a lot of work in future.”

### Deepest Bregrets

Nancy Rothwell, vice-chancellor of the University of Manchester, alludes to Brexit in the opening ceremony: “Despite recent events, Manchester and its people are and will remain part of Europe.”

### Cut them some slack

Scientists should show MEPs empathy even when they don’t fully grasp the impact of technology regulation, says European Parliament vice-president Mairead McGuinness: “The science of legislation is not perfect because it is being made by human beings with opinions and concerns.”

### Fighting burnout

Michel Kazatchkine, the UN secretary-general’s special envoy for AIDS in eastern Europe and central Asia, acknowledges the enormity of the task of tackling disease: “After 30 years, I see some fatigue, declining interest, changing activism and questions of whether we are really making progress with the most marginalised populations.”

### A lack of advice

New Zealand’s chief scientific adviser Peter Gluckman says that insufficient scientific advisory structures is the biggest challenge to meeting the Sustainable Development Goals: “Only when states recognise that the evidence is critical in progressing these goals will the goals become achievable.”

# Riding the tsunami

**Luke Georghiou** reflects on six days of science, policy, culture and cocktails.

**FRIDAY 22 JULY** For the past week, there seems to have been a query every 10 minutes about one or another VIP's arrangements. The first event is a media reception in Cloud 23 cocktail bar, atop the tallest residential building in Europe, and it includes science-themed cocktails. Then off to the Museum of Science and Industry for the launch of 'Wonder Materials: Graphene and Beyond'. It's interesting to see events and people you know translated into exhibits that will sit alongside artefacts from the industrial revolution in the next hall.

**SATURDAY 23 JULY** The biggest part of ESOF's accompanying Science in the City festival is Bluedot at Jodrell Bank. 15,000 people enjoy a combination of music and science under the Lovell Telescope. The ESOF tent features Cern, the Square Kilometre Array and Marc Abrahams, founder of the Ig Nobel Prize, who talks about "science that makes people laugh then think". There's a lot of the first and some of second. One more reception, and then I'm relaxing to Jean-Michel Jarre, although I do wonder whether his lasers are pointing at Manchester Airport's flight path.

**SUNDAY 24 JULY** To our main venue, Manchester Central Convention Complex, to launch a satellite event on responsible research and innovation. Turnout is good for a Sunday morning. Then to Manchester City Council Chamber for a private session on ethics and principles in science policy-making. From there to the stunning Shared Sky exhibition of indigenous art, inspired by cosmology from South Africa and Australia, the sites of the SKA telescopes.

Mid-afternoon, delegates pile in for the opening ceremony. Physicist Brian Cox comperes flawlessly and the two riskiest things you can do on stage—live links (to the SKA sites) and appearing with children—end up as high points. A quick spin through the exhibition's 68 stands, and on to the President's Dinner in the Town Hall. Mark Ferguson, Ireland's chief scientist, gives an after-dinner speech with jokes worthy of a Carry On film.

**MONDAY 25 JULY** Normal sessions start, and then pause for a plenary by research commissioner Carlos Moedas on global and open science. Key point: "The relationship with the general public will define science in the 21st century". Then over to the Town Hall, where former science minister David Willetts is giving the Fred Jevons Science

*Luke Georghiou was co-champion of ESOF 2016, and is professor of science and technology policy and vice-president for research and innovation at the University of Manchester.*

Lecture. Jevons was my first professor, and it's a privilege sharing reminiscences. Dash back to hear colleagues present findings from our Horizon 2020 project.

Next it's time to show Moedas and Princess Sumaya bint El Hassan of Jordan the National Graphene Institute. A graphene car and a graphene-winged drone are on display. Back to Cloud 23 for the sponsors' reception—more science cocktails! Dinner at a new restaurant, Grafene, courtesy of Japanese and South African colleagues. Then the ESOF party: strobes, more lasers and Oldham-based rock band The Whip. Delegates young and old recreate their best student nights. Walk back minus hearing.

**TUESDAY 26 JULY** Business day kicks off with an inspirational talk on scale-up firms from entrepreneur Sherry Coutu, followed by a fascinating session comparing the outlooks of angel, venture capital and corporate investors. Herman Hauser, a founder of the Cambridge-based semiconductor giant ARM, shares his disquiet at the company's impending Japanese takeover. Change sides to speak in a session on interdisciplinary science and excellence. Finish day by chairing a panel on the value of research, followed by dinner with the panelists.

**WEDNESDAY 27 JULY** Brexit has been in the air—now it's tackled head on in a packed session. The most common quote of the week has been Michael Gove's remark that Britain has "had enough of experts". There are parallels with climate change—we need to mitigate and adapt. In the afternoon, Manchester professor of public history Michael Wood juxtaposes China's past with Manchester's industrial revolution. A strong strand on science diplomacy concludes with Princess Sumaya leading discussion on SESAME, a light source—in every sense—in the Middle East. Compere the closing ceremony and handover to 2018 host Toulouse. Thanks and flowers for some brilliant colleagues, but many more are owed.

Segue to French cheese and wine with the Remain battle-cry 'Fromage not Farage!' Dinner with colleagues from Toulouse and EuroScience. On to the bar with the ESOF team and Carl Austin-Behan, Manchester's marvellous Lord Mayor, who came to the opening and kept coming back. It's over—after 3,000 delegates, 700 sessions and 150 speakers. Sleep (possibly for the whole summer). *Something to add? Email comment@ResearchResearch.com*

'Delegates young and old recreate their best student nights. Walk back minus hearing.'

## overheard at esof

**WHO'S LISTENING?** Research commissioner Carlos Moedas and UK science minister Jo Johnson shared the opening plenary. But while Moedas was confident and visionary, Johnson was dull, scripted and littered his talk with phrases—such as ‘post-Brexit era’—that the audience did not want to hear. As Johnson went to leave, host and UK government chief scientific adviser Mark Walport showed his worth by reminding him to unclip his microphone. “We don’t want one of those moments!” an amused onlooker remarked. The minister saying something interesting on the mic? Perish the thought.

**THE KICKOFF** ESOF’s opening ceremony was a slick affair hosted by physicist and TV presenter Brian Cox. We had wondered how ESOF would be affected by its host country’s decision to leave the EU, and were impressed that the organisers decided to tackle the issue head-on. Cox took to the stage to the musical accompaniment of Moby’s “We Are All Made of Stars”. Sample lyric: “People they come together...people they fall apart”.

**DEAL OF THE DAY** The Bluedot festival at the Jodrell Bank Observatory—part of ESOF’s public outreach—proved wildly successful, with the Lovell Telescope’s 76-metre dish forming a spectacular backdrop. But while most people were busy enjoying the eclectic music and science events, one entrepreneurial attendee had other things in mind. A sign on the Real Ale tent advertised a telescope for sale, for the reasonable price of £600. Well, if you can’t sell it at Jodrell Bank...

**CLARITY AT LAST** UK researchers are puzzling over what possessed their government to combine research and innovation under one umbrella organisation, UK Research and Innovation. Former science minister David Willetts had an original answer at an ESOF special session. “Civil servants have to work on the basis that ministers are idiots,” he said, adding he’d been told that the reorganisation was intended to be ‘minister-proof’. He was keen to point out that he certainly wasn’t referring to Jo Johnson’s abilities.

**LOST IN THE POST** The great and the good of science policy descended on the splendid Victorian chambers of Manchester Town Hall to discuss a set of principles for science advice. One theme at the invite-only meeting was the need for scientists and principle-setters to “get out of their ivory tower” and stop behaving like a closed-shop elite. Wait a minute...

**PRACTICALLY PERFECT?** A self-aware, apologetic humour was endemic among the British hosts. In a session focused on public engagement with science, journalist Vivienne Parry began by brusquely ushering loiterers out of the doorway and telling her audience to shush and listen. “This is why Brits are hosting: we’re 99 per cent Mary Poppins and 1 per cent Mrs Thatcher,” she said.

**CROWDSOURCING SOLUTIONS** A session on the future of food systems was interrupted somewhat bluntly when the vice-president of the European Parliament, Mairead McGuinness, interjected that the panel’s comments “were not landing anywhere”. She encouraged them to specify how their vision could be transformed into regulation. One unimpressed attendee declared: “She just wants us to do her job!”

**SPACIOUS; QUIET LOCATION** With the lengthy campaign to prevent the Parliament having to support a rarely used second site in Strasbourg, it appears MEPs are taking matters into their own hands. Austrian MEP Paul Rübig was overheard offering the meeting rooms to venture capitalists, in an attempt to keep them busy.

**CLOAK AND DAGGER** As well as the public sessions, ESOF was great for private meetings. A group of European Research Council grantees were spotted at just such a meeting in one quiet corner. The purpose? A source hinted that the ERC could be creating a grassroots network to help preserve its good public image.

**FAUX PAS DE DEUX** The role of the Joint Research Centre in the European Commission’s Scientific Advice Mechanism was already a thorny issue before Sierd Cloetingh, president of Academia Europaea, said “It takes two to tango” in describing the contributions of Europe’s learned academies and individual SAM advisers. Realising the error of his ways, he added: “Of course with the JRC also it takes three to tango.” Isn’t three a crowd?

**HAMMERTIME** With over 150 sessions and special events across four days, ESOF had plenty to offer. But perhaps our favourite moment took place outside the hectic daytime schedule, at the conference party. As midnight approached, attendees took it on themselves to form a circle and do battle in a dance-off to 90s MC Hammer hit “U Can’t Touch This”, with one person even breaking out The Worm. Mission to loosen people up: accomplished.

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