

Soul-searching scientists struggle to get message across

April 29 2017, by Mari  tte Le Roux



A trend has grown to challenge tenets that enjoy overwhelming expert consensus, including global warming

"We mortals do not understand you." That's the heartfelt cry from former UN climate chief Christiana Figueres, pleading with scientists to use everyday language to help counter growing public mistrust.

Figueres was giving one explanation of why scientists are struggling to

get their message across to a sceptical public at a major conference in Vienna this week.

Delegates made time for soul-searching at the meeting in the Austrian capital, conceding that they bear part of the blame for alienating some people.

Just days after a historic March for Science in Washington, the experts owned up to failures including remoteness and condescension—and operating in an "echo chamber of likeminded people".

"I think it's the conceitedness, in a way," said Heike Langenberg, chief editor of the journal *Nature Geoscience*.

"The problem is that scientists have not spoken at an even level with people who are out there," she told AFP on the sidelines of a European Geosciences Union (EGU) meeting of more than 14,000 experts in 22 fields.

"They have tended to give long speeches and not listen.... I think they have underestimated intelligence and overestimated knowledge."

This has contributed to an erosion of support for [science](#) since a high point in the 1960s when humans planted a flag on the Moon.

Led by the United States, a trend has grown since then to challenge certain basic tenets that enjoy overwhelming expert consensus—the benefits of childhood vaccination, evidence for species evolution, and the perils of global warming.

One prominent doubter, Donald Trump, is now in the White House. He has described climate change as a hoax and linked childhood vaccines to autism.

Since taking office, Trump has moved to curb science spending and gag government researchers.

A 2012 study in the *American Sociological Review* reported a dramatic loss of scientific faith among US conservatives, from nearly 50 percent who reported a "great deal" of trust in 1974 to only 35 percent four decades later.



People attend the March for Science in Vienna on April 22, 2017

Liberal views have consistently hovered around the 50-percent mark.

Jargon

The "politicisation" of science is a major part of the problem, conference delegates said.

Not only do politicians cherrypick convenient findings, so creating the impression that research is partisan, but also some scientists have trespassed into what Langenberg described as the "public bazaar of opinions".

Advancing any view or judgement is a no-no in the evidence-based research sphere, founded on the cardinal acceptance that nothing is ever certain.

The EGU meeting, which gathers annually to scrutinise the latest research in Earth and space science, this year atypically held an introspective debate entitled "Make facts great again: how can scientists stand up for science?"

The motivation was a clear trend of "growing distrust of experts (and) rejection of inconvenient facts," said EGU president Jonathan Bamber, a glaciologist.

Communicating science effectively has never been more important, said delegates.

Diplomat Figueres made a plea on behalf of policy-makers.

"We are the ones who need to understand and take the implications of what you do and try to translate it into decisions, into policies," she said. "And if we don't understand there's nothing we can do about it."

Unlike the awe-inspiring Moon quest, many of today's science problems tackle complex, controversial and unpleasant themes that touch on humanity's very survival.



US President Donald Trump has expressed concerns that childhood vaccinations could be linked to autism

Challenging power

Some research fields threaten major economic interests—for example the coal and oil industries' vulnerability to climate science showing a need to curb fossil fuel use, or that of soft drink manufacturers to health warnings about sugar.

"There's huge economic interest at risk," said Christine McEntee, executive director of the American Geophysical Union.

This can cause vested interests to "speak out and skew the science. That has eroded trust."

Another contributor is a modern media focus on entertaining narrative.

"You can't beat narratives with facts," lamented Langenberg.

"Humans like stories, they tell stories, they listen to stories and they are influenced by stories, and unfortunately whether these stories are factual doesn't really matter all that much," she said.

"Many of us think that facts speak for themselves, but I think that is a misconception. Facts actually need trust and that is something we need to gain."

The answer?

Scientists have to go back to basics— thorough vetting and peer review to limit research mistakes and fraud, and resisting the temptation to exaggerate findings in a quest for prestige or funding.

"It's important for the science community to be responsible in the way they communicate the science, so as not to sensationalise their own findings and not to try and just go for a headline rather than a much more... sober and factual presentation of findings, the EGU's Bamber told AFP.

"What we can do, and should do, is keep emphasising what science can't do and can do," added Langenberg.

"We very rarely can provide complete and final truth, that's important to stress"—so that people are not left frustrated by the process.

"Science is search, and the search will go on."

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