

## PUBLISHING

# Elsevier probes dodgy citations

*Hundreds of peer reviewers could be exploiting process.*

BY DALMEET SINGH CHAWLA

The Dutch publisher Elsevier is investigating hundreds of researchers whom it suspects of deliberately manipulating the peer-review process to boost their own citation numbers.

The publisher is looking into the possibility that some peer reviewers are encouraging the authors of work under review to cite the reviewers' own research in exchange for positive reviews — a frowned-on practice broadly termed coercive citation.

Elsevier's probe has also revealed that several of the reviewers seem to be engaging in other questionable publishing practices in studies that they have authored. The Elsevier analysts who uncovered the activity told *Nature* that they had "discovered clear evidence of peer-review manipulation". The publisher said that its investigations will lead to some of these studies being retracted.

But the company said it won't be necessary to retract any studies found to be affected by coercive citation, because the authors aren't responsible for the problem, and citation manipulation doesn't affect the research.

Elsevier analytics experts Jeroen Baas and Catriona Fennell discovered the suspicious activity. The pair, based in Amsterdam, looked at the peer-review activity of almost 55,000 academics who review for Elsevier journals, in a bid to find out how often these researchers' work is cited by the papers they assess. The study was posted on the SSRN repository for social-science research on 6 September ([go.nature.com/2m8nidy](https://go.nature.com/2m8nidy)).

Fennell and Baas found that, in most cases, reviewers' own studies are not cited in work that they have reviewed. But a small minority of reviewers — less than 1% of those examined — consistently seem to have their own work referenced in studies they have reviewed. This could indicate instances of coercive citation.

Elsevier is approaching journal editors to ask whether the references in question are relevant. Fennell says that the company has finished investigating the most suspicious cases, but is still scrutinizing less serious ones.

Elsevier is also considering ways to address inappropriate referencing, including retracting individual references in studies, a move that would be unprecedented. Fennell says it could also issue corrections. "We're still working out the best way forward," she says. ■



Doochul Kim, president of the Institute for Basic Science in South Korea, will step down this month.

## POLITICS

# Tough times for 'Nobel project'

*South Korea's Institute for Basic Science endured a series of government audits and a sizeable budget cut this year.*

BY MARK ZASTROW

It's been a tumultuous year for the prestigious Institute for Basic Science (IBS) in South Korea — a collection of research centres that was founded in 2011 and designed to win the country its first science Nobel prize. Modelled on the Max Planck Society in Germany and RIKEN in Japan, the institute's mission is to foster blue-skies basic science in a country historically more focused on applied research. But over the past 12 months, it has faced government investigations and calls for reform, following accusations of nepotism and financial mismanagement — as well as a sizeable cut to its research budget.

The IBS is now seeking a new leader: current president Doochul Kim's term ends later this month. But many IBS researchers say his replacement, whoever it is, will face a considerable challenge to turn around the organization's fortunes. Many researchers argue that the allegations against the institute — and the media's response — have been overblown. Still, they worry that the events of the past year might have a lasting impact and make it difficult for the organization to function properly.

"The basic philosophy of the IBS was to give full freedom for the researchers to carry out whatever they want to do," says Narry Kim, director of the IBS Center for RNA Research. Leading scientists from South Korea and abroad were recruited to start centres, and were promised autonomy to run them, along with roughly 10 billion won (US\$8.4 million) a year. But some directors worry that proposals made in the wake of the turmoil could erode their autonomy, which they argue could undermine the organization's original mission.

Many researchers say that the IBS has helped to globalize South Korea's research. The scale and resources of IBS centres help to forge collaborations with international researchers, says Philip Kim, a condensed-matter physicist at Columbia University in New York City. "That's one of the best things that IBS has done for Korean research," he says.

The institute's recent troubles started in October, when lawmakers from the ruling liberal Democratic Party grilled Doochul Kim during annual parliamentary hearings. They criticized a project to construct a heavy ion particle accelerator in Daejeon for being over budget and behind schedule. Doochul

Kim told *Nature* that one of the project's ion sources has been delayed by a year, but that this is a minor setback for a large-scale project.

Following the hearings, the government announced in November that it was auditing 4 of the IBS's 30 centres. And a week later, it confirmed the IBS's research budget would be cut by 7%, from 254 billion to 236.3 billion won. The cut, which came into effect this year, left centres with an average budget of a little over 6 billion won, says Doochul Kim.

The organization came under further scrutiny when several South Korean broadcasters reported in June that, according to audit results, at least two centres had misspent research funds. Media reports also called out multiple centres for questionable hiring practices, including the review of candidates by acquaintances. The media coverage was followed by another government audit — this time of 24 of the 30 IBS centres. The investigation was due to finish last month. The science ministry has not yet released its findings.

Doochul Kim told *Nature* that most of the allegations against the IBS reported in the media amount to administrative errors rather than nefarious wrongdoing. He thinks that the audits are politically motivated, and criticizes the way some preliminary results have been leaked to the press.

Since its inception, the IBS has had critics who think the institute swallows up too much of the nation's basic research budget. It's the institute's

"original sin", says So Young Kim, a science and technology political scientist at the Korea Advanced Institute of Science and Technology (KAIST) in Daejeon. The IBS is also associated with the country's main conservative party, which founded it. When the Democratic Party came to power in 2017, it was more interested in spreading resources to many researchers, says So Young Kim. "It's a very different philosophy."

#### GROWING PAINS

Narry Kim, who says that the IBS centre she leads was audited in July, notes that the behaviours that have been criticized in the media might have arisen because of confusion about the rules — rather than anything more nefarious — and that this is an expected "growing pain" for an innovative style of research organization. The IBS was designed to break the mould of other public institutions in South Korea by giving centre directors freedom and larger-scale funding to pursue high-risk, high-reward projects that could win Nobel prizes. South Korea has never won a scientific Nobel, and the IBS is frequently referred to as the nation's 'Nobel prize project'.

But the IBS's flexibility has sometimes led to ambiguity, Narry Kim says. For instance, ten IBS centres, including hers, are administered by host universities and so are subject to both university and IBS regulations, which sometimes conflict or lead to confusion.

Doochul Kim accepts that some features of the IBS need to change to protect centres

from being involved in further scandals. He has proposed redefining the institute's core principle of autonomy to ensure that centre heads would no longer have direct authority to hire tenure-track research fellows, thus avoiding accusations of nepotism. IBS directors are allowed to hire directly, but in South Korea the public is quick to anger at any hint of nepotism. Doochul Kim also proposed changes to the IBS's administrative structure. For instance, the institute currently has administrative staff at each research centre, but he wants the five IBS centres at KAIST to share a centralized office that would be more powerful and relieve directors of some of their administrative burdens, such as approving all purchasing decisions, no matter how small.

But the proposals undermine the IBS's original goal of having centre directors make decisions about how they are run, says Yannis Semertzidis, director of the IBS Center for Axion and Precision Physics Research at KAIST. IBS management should strengthen internal auditing to root out actual misconduct, but not interfere with directors' decision-making, he argues.

With Doochul Kim's term almost over, it will be up to his successor to follow through on his proposals. A shortlist of three South Korean physicists was announced last week. The science minister will nominate one person, subject to the approval of South Korean President Moon Jae-in. ■

#### ANCIENT HUMANS

# Iconic finger fossil reconstructed

*Virtual restoration of Denisovan finger bone reveals surprisingly human-like digits.*

BY EWEN CALLAWAY

A new analysis of a finger bone used to study the Denisovans — a group of ancient humans identified in 2010 — offers clues to a decade-long mystery surrounding one of the most important hominin fossils ever found.

The study describes the very tip of a right-hand little finger, which was separated from the rest of the finger bone after it was excavated 11 years ago. A digital reconstruction of the complete finger bone, or phalanx, reveals that the Denisovans' fingers were much more similar to those of modern humans than expected.

"I'm happy that we could get something out," says Eva-Maria Geigl, a palaeogeneticist at the Institute Jacques Monod in Paris, who co-led the study. "So far there was nothing, as if the phalanx was lost."

Her team sequenced DNA from the missing fragment to show that it matched the rest ►



The Denisova Cave in Siberia has been a rich source of bones belonging to ancient hominins.