adding that every funding body should be looking at the effect of their grants.

"If scientists are dissuaded from science by lack of funding, then the investment in scientific training becomes a sunk cost," says economist Donna Ginther of the University of Kansas in Lawrence.

COMMON TREND

Previous studies have made similar findings about the effects of early-career grants on later success, but the authors of the latest work say that they compared the fate of researchers with similar abilities in a way that no one else has. Earlier this month, Ginther published the results of a similar analysis, which found that securing a specific early-career fellowship from the US National Institutes of Health increases a researcher's chance of winning more grants from the funder (M. L. Heggeness *et al.* NBER Working Paper No. 24508; National Bureau of Economic Research, 2018).

The Dutch study, led by sociologist Thijs Bol at the University of Amsterdam, draws on data from the Netherlands Organization of Scientific Research (NWO), the country's national research council. The NWO operates a three-stream funding scheme that sets aside a total of €150 million (US$183 million) a year for scientists in the early, middle and established stages of their careers. Bol and his colleagues tracked more than 4,000 researchers who applied for the scheme's early-career grant between 2002 and 2008.

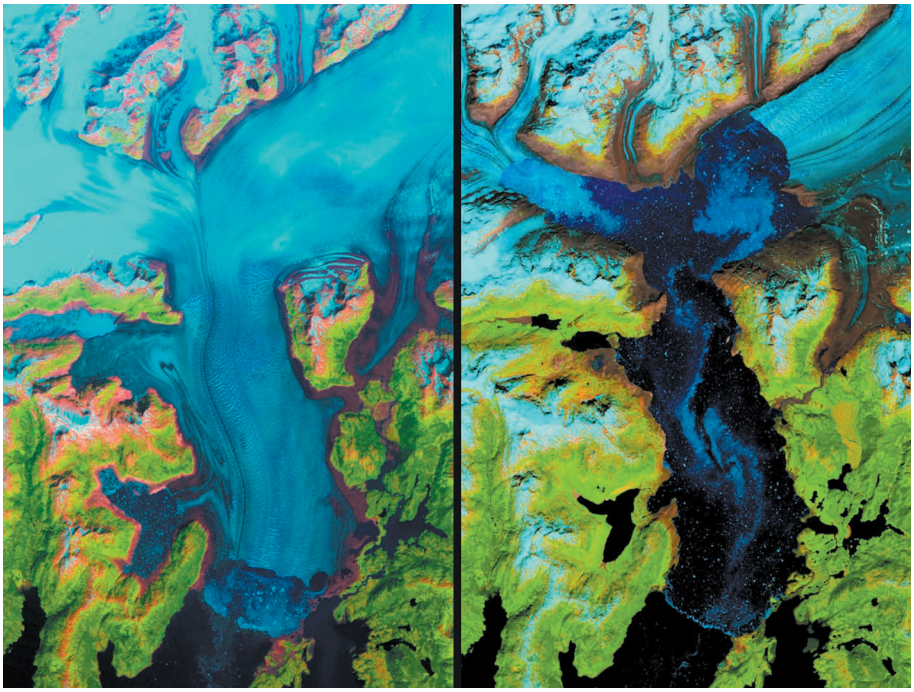
They looked at the grant-application scores of those academics, and tracked whether they went on to secure a mid-career grant from the funder in the following eight years. They also counted any grants from the European Research Council won between 2005 and 2016.

For around 1,400 of the early-career applicants, the researchers sourced data from article database Scopus about their publication and citation records before, during and after the time period of the NWO grants. They also determined how many of them had become full professors by 2018.

They found that candidates slightly above and below the funding cut-off had different career trajectories, even though their publication and citation records remained similar.

Researchers who ranked just above the threshold secured €180,000 in research funding over the next 8 years — more than twice as much as those just below it (see 'Thin line'). This was partly because researchers who lost out on the initial grant were less likely to apply for future funding.

"There is a group of very young talented scholars who have bad luck," says Bol. "They do not get the same resources to bring their ideas to life." ■



LANDSAT/EO/NASA

The ongoing melting of Alaska's Columbia glacier is shown in these Landsat images from 1986 and 2017.

EARTH OBSERVATIONS

US government reviews data fees

Images from Landsat satellites and agricultural-survey programme are freely available to scientists — for now.

BY GABRIEL POPKIN

The US government is considering whether to charge for access to two widely used sources of remote-sensing imagery: the iconic Landsat satellites operated by the US Geological Survey (USGS) and an aerial-survey programme run by the Department of Agriculture (USDA).

Officials at the Department of the Interior, which oversees the USGS, have asked a federal advisory committee to explore how putting a price on Landsat data might affect scientists and other users; the panel's analysis is due later this year. And the USDA is contemplating a plan to institute fees for its data as early as 2019.

Researchers who work with the data sets fear that changes in access could impair a wide range of research on the environment, conservation, agriculture and public health. "It would be just a huge setback," says Thomas Loveland, a remote-sensing scientist who recently retired from the USGS in Sioux Falls, South Dakota.

The Landsat programme began with one satellite in 1972, and has launched another seven since. Together, they have produced the world's longest-running data set of satellite images. The two current probes take pictures at a resolution of 30 metres up to every 8 days.

Until 2008, researchers had to buy Landsat images — and they often designed studies to limit data costs, Loveland says. "You would buy as few images as you possibly could to get an answer."

Since the USGS made the data freely available, the rate at which users download it has jumped 100-fold. The images have enabled groundbreaking studies of changes in forests, surface water and cities, among other topics. Searching Google Scholar for "Landsat" turns up nearly 100,000 papers published since 2008.

A USGS survey of Landsat users released in 2013 found that the free distribution of imagery generates more than US$2 billion of economic benefit annually — dwarfing the programme's current annual budget of roughly $80 million. More than half of the nearly 13,500 survey respondents were academics, and the majority lived outside the United States. ▶

In July 2017, officials at the Department of the Interior asked a committee of external advisers to study whether Landsat's costs could be recovered from users. The panel is preparing a white paper for release this year. "It's a serious discussion," says committee member Rebecca Moore, director of engineering at Google's Earth Engine.

Loveland says that trying to make the Landsat programme pay for itself could backfire: charging for data would probably lower usage, and the administrative costs of handling payments would eat into any revenue. "It costs a lot of money to charge money," he says.

The last time the federal advisory committee examined whether to reinstate fees for Landsat data, in 2012, it concluded that "Landsat benefits far outweigh the cost". Charging money for the satellite data would waste money, stifle science and innovation, and hamper the government's ability to monitor national security, the panel added.

Then there is the USDA's National Agricultural Imagery Program. Since 2003, it has hired companies to gather images of Earth's surface using aircraft, covering the entire United States at least once every three years. The resulting pictures have a resolution of 1 metre, enabling scientists to detect individual trees and buildings.

The data are "a critical component to [land] management here in the West", says April Hulet, an ecologist at the University of Idaho in Moscow who uses the images to study invasive plant species and fire risk. If the USDA began charging for the information, Hulet says, she would probably pay — if she could afford it.

The USDA is considering whether to license the data for a fee starting in 2019, according to minutes from a November 2017 meeting of an interagency panel that oversees US geospatial policy. The USDA hopes to have a draft plan ready by the end of summer, and then post it for public comment, says Denny Skiles, director of the department's Aerial Photography Field Office in Salt Lake City, Utah.

There are no perfect substitutes for images from Landsat or the USDA programme. Companies such as Planet and DigitalGlobe collect high-resolution satellite images and give scientists free access to some of those data. But buying commercial imagery that covers large areas or long periods is too expensive for many researchers. And although the European Space Agency's Sentinel-2 satellites provide free global imagery at resolutions up to 10 metres, they cannot match Landsat's 46-year record, says Martin Herold, a remote-sensing expert at Wageningen University in the Netherlands.

"The longer and more dense the archive," he says, "the more valuable it becomes." ■

POLICY

Rent rise frustrates EU drug agency

European Medicines Agency hits relocation stumbling block.

BY INGA VESPER

Amsterdam's red-hot property market might threaten the mission of Europe's drug regulator. With less than a year to go before the European Medicines Agency (EMA) must leave its London headquarters because of Brexit, the agency is facing an unexpected rent increase that could cut into its budget for approving new medicines and overseeing clinical trials.

The multimillion-euro rent increase, which is spread over two decades, was revealed — along with other problems with the agency's move to Amsterdam — in EMA board-meeting minutes that were released this month.

The developments threaten to drain crucial resources, financial and otherwise, at a time when the agency's operational capacity is uncertain owing to expected staff losses caused by the move, say agency officials and observers.

The EMA is engaging in frantic business planning to ensure the move takes place "with as little interruption as possible", says deputy executive director Noël Wathion.

But the agency might soon cut some crucial functions for science, including advising on early-stage drug research and implementing a directive to ensure good practice in clinical trials, according to contingency plans drafted by the agency to prepare for the move.

"We had a very open and frank discussion with the Dutch colleagues and we reached an agreement."

The EMA, whose roughly 900 staff members oversee the safety of European medicines and offer scientific advice, is scheduled to move from London to Amsterdam in March 2019. Its new location was chosen last November by the European Union, from bids submitted by several countries, including Italy, Sweden and Slovakia. The final vote between Amsterdam and Milan was a tie, so the result was determined with a coin toss. This has left the Italian side furious — Milan's mayor has even threatened legal action.

The rent issue is adding fuel to this controversy, say agency observers. In February, according to the board-meeting notes, representatives of the Netherlands demanded a 34% increase in the rent for 2019, which had been pegged at €320 (US$390) per square metre of office floor space in the country's initial bid. The increase, they said, resulted from extra costs of fitting out the building and from rising property values in Amsterdam's fast-growing Zuidas neighbourhood, where the EMA's new headquarters are under construction.

The EMA's board rejected the proposal at a 28 February meeting, arguing that the original bid, on the basis of which Amsterdam was chosen, mentioned no such increases and included the costs of fitting out and furnishing the building.

"We have always said that the figures in the initial bid had to be adhered to," says Wathion. "We had a very open and frank discussion with the Dutch colleagues and we reached an agreement."

This final deal includes a clause under which the rent will go up by a fixed rate of 2% every year for the next 20 years, starting at the original price tag of €320 per square metre in 2019 and ending up at €466 per square metre in 2039, according to Wathion. As a result, the EMA's annual rent will increase from an estimated €10 million a year when it moves in, to around €15 million 20 years later.

Pre-agreed rent increases are common in commercial properties, says Wathion, but the fixed increase raised eyebrows at the agency. The meeting minutes called the arrangement "unusual". Rents are typically tied to inflation or the consumer price index. The EMA's London rent, for example, fell by about 4.4% between 2016 and 2018.

But Dutch representatives argued that fixing the rent increase is fair, considering that the price tag, over 20 years, will be smaller than the rent on the EMA's current premises in London's expensive Docklands area. That rent stood at €14.5 million for 2018. The agency's presence will boost property prices in Zuidas owing to an expected influx of professionals, said the Dutch representatives. "The relocation of this agency will work like a magnet for all kinds of companies and professionals," says Anton van Tuyl, a spokesperson for the Dutch Association of Innovative Medicines in The Hague.

The Dutch government had not responded to queries from *Nature* as this story went to press. ■