

SCIENCE IN 2015

The global research enterprise is already vast, whether measured in people, publications, patents or refreshments. And it is getting bigger fast. Assuming current trends continue, here is what the New Year has in store.

BY MARK ZASTROW

R&D SPENDING

Global investments in research and development have been growing by some 7% annually for more than a decade.

2000
\$706
BILLION

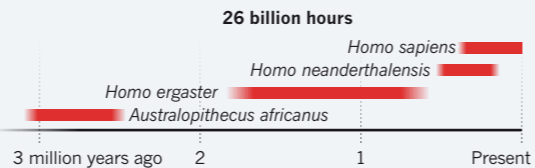
2005
\$954
BILLION

2010
\$1.3
TRILLION

2015
~US\$1.9
TRILLION

This year, the total should roughly equal the gross domestic product of India.

~26 BILLION
RESEARCHER HOURS



With some 10 million researchers averaging 50-hour working weeks, the global human effort going into R&D is equivalent to 2.9 million years — a span of time that would extend back to the heyday of *Australopithecus africanus*.

~2.6
MILLION
PATENTS
FILED

~1.2
MILLION
PATENTS
GRANTED

These key measures of innovation will have more than doubled since 2000.

2 DWARF
PLANETS
VISITED

NASA's Dawn spacecraft will arrive at the dwarf planet Ceres, located in the asteroid belt between Mars and Jupiter, in March. The agency's New Horizon spacecraft will fly by the dwarf planet Pluto in July.

~920,000
PUBLICATIONS

~470
RETRACTIONS

The world's output of scientific articles is growing at about 2.8% per year. Only a tiny fraction are ever retracted — but that number also seems to be growing.

~260,000

NEW PhD HOLDERS WORLDWIDE

This is a crowd that could fill Beijing's 80,000-seat National Stadium more than 3 times over. If these new degree-holders were magically reassembled into a single 'Gradzilla' with the same volume, the resulting creature would be over 100 metres tall.

2002	125,000 PhDs
2004	150,000
2006	174,000
2008	194,000
2010	201,000
2015	~260,000

~234,000 COOKIES CONSUMED AT
McMURDO STATION

These easy-to-grab treats are a favourite fuel for those long hours in the laboratory. In Antarctica's McMurdo Station alone, cookies are devoured at the rate of 4,500 per week.

~1 BILLION
CUPS OF COFFEE

Scientists consume this essential stimulant in vast quantities. The order-of-magnitude estimate of global consumption given here may well be on the low side, but it is enough to give every resident of the European Union a cup and a refill.

~1.5 TRILLION
BASES FILED IN GENBANK

The online sequence-data repository has been doubling in size every two years or so, and the pace is picking up. By December it could reach the size of 500 human genomes — and will still represent only a fraction of the sequence data stored worldwide.

ARTWORK BY CHRIS RYAN/NATURE

NATURE.COM
Learn more about
these numbers at
go.nature.com/
rdns2