

ASTRO-H project manager Tadayuki Takahashi, an astrophysicist at the University of Tokyo and ASTRO-H's project manager, pushed his collaboration to work without borders. "Usually, international coalitions have clearly defined interfaces," with different laboratories providing isolated components of a spacecraft and its payload, says Takahashi. But ASTRO-H researchers regularly visited each other's labs, sometimes for months at a time.

Kelley says that Takahashi forged a very open collaboration. "Tad understands that if you want to maximize the chances of success, you have to have no barriers," he says. "Everybody has access to everything."

Astronomers around the world will be allowed to request observing time with ASTRO-H. Each team will have exclusive access to the resulting data for one year, after which JAXA will make them publicly available — a model long adopted by NASA. ASTRO-H will be renamed after launch, although what it will be called is yet to be determined.

A larger, higher-resolution version of the SXS is due to fly aboard Athena, an ESA-led X-ray astronomy mission planned for the late 2020s. ■

Additional reporting by David Cyranoski.

The ASTRO-H probe is preparing for launch.



JAXA

REPLICATION

Biotech giant posts negative results

Amgen papers seed channel for discussing reproducibility.

BY MONYA BAKER

A biotechnology firm is releasing data on three failed efforts to confirm findings published in high-profile scientific journals — details that the industry usually keeps secret.

Amgen, headquartered in Thousand Oaks, California, says that it hopes the move will encourage others to describe their own replication attempts, and thus help the scientific community to get to the bottom of work that other labs are having trouble verifying.

The data are posted online on a newly launched channel dedicated to quickly publishing researchers' efforts to confirm scientific findings (see go.nature.com/3zzea9), hosted by *F1000Research*, the publishing platform of London-based publishers Faculty of 1000 (F1000).

The idea emerged from discussions at a meeting in 2015 focused on improving scientific integrity. Sasha Kamb, who leads research discovery at Amgen, said that his company's scientists have many times failed to reproduce academic studies but that it takes too much effort to publish these accounts.

Bruce Alberts, a former editor-in-chief of *Science* who sits on *F1000Research*'s advisory board, suggested that Kamb try the faster F1000 route — an open-science publishing model in which submitted studies are posted online (for a fee that ranges from US\$150 to \$1,000) before undergoing open peer review; submissions are subject to checks by F1000 editors to ensure that data are freely available and that methods are adequately described. "The idea is to get the data out and get it critically looked at," Alberts says.

IRREPRODUCIBLE HISTORY

In 2012, Amgen researchers declared that they had been unable to reproduce the findings in 47 of 53 'landmark' cancer papers¹. Those papers were never identified — partly because of confidentiality concerns — and there are no plans to release details now, says Kamb, who was not involved with that work.

The three latest studies that Amgen has posted deliberately do not make a detailed comparison of their results to previous papers, says Kamb. "We don't want to

make strong conclusions that someone else's work is wrong with a capital W," he says.

One study adds to existing criticism of a *Science* paper² that suggested a cancer drug might be a potential treatment for Alzheimer's disease; a second counters earlier findings (including some by Amgen researchers) connecting a gene to insulin sensitivity in mice^{3,4}; and a third counters a *Nature* paper⁵ reporting that inhibiting one particular protein could enhance the degradation of others associated with neurodegenerative diseases. Amgen researchers did not contact the original authors when they conducted their studies, Kamb says.

GAINING TRACTION

The main way that the scientific community spreads the word about irreproducible research is through insinuation, which is inefficient and unfair to the original researchers, says Ricardo Dolmetsch, global head of neuroscience at Novartis's Institutes for Biomedical Research in Cambridge, Massachusetts. "Anything we can do to improve the ratio of signal to noise in the literature is very welcome," he says.

The F1000 initiative is useful, but previous efforts have tried and failed to encourage the reporting of replications and negative results, cautions John Ioannidis, who studies scientific robustness at California's Stanford University. In general, the scientific community undervalues such work, he says.

But Kamb says that he has spoken with several industry leaders who have expressed support, and he hopes that they will contribute eventually. Morgan Sheng, a vice-president at biotechnology company Genentech in South San Francisco, says that he can foresee his company's scientists submitting data to the venture. "I believe the main risk of a publication venue like the F1000 channel is that it becomes a place for 'bashing' good science, because biological experiments are complex and beset by many variables that are hard to control. Non-replication does not necessarily mean 'not true,'" Sheng adds. ■

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2. Cramer, P. E. et al. *Science* **335**, 1503–1506 (2012).
3. Gardner, J. et al. *Biochem. Biophys. Res. Commun.* **418**, 1–5 (2012).
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