

# California unveils 'precision-medicine' project

The \$3-million state initiative will coordinate with a national effort to promote individualized patient treatment.

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The state of California is launching a US\$3-million precision-medicine project. The effort, announced on 14 April, will draw on vast amounts of data from basic research, medical records and other information to develop more-targeted therapies and diagnostics and inform decisions about individual patient care.

News of the plan, called the California Initiative for Advancing Precision Medicine, comes three months after US President Barack Obama [unveiled a \\$215-million precision-medicine programme](#) that will include a longitudinal study of around one million volunteers. It also follows similar initiatives in other countries, such as a British effort to sequence the whole genomes of 100,000 patients enrolled in the UK National Health Service.

Keith Yamamoto, vice-chancellor for research at the University of California, San Francisco (UCSF), says that the state has been working towards its precision-medicine programme for several years. "The broad demographics of the state, coupled with the enormous resources of intellectual capital and the entrepreneurial spirit that is embodied in the companies that are resident here, makes California a good place to do this," he says.

The state plans to spend a total of \$2.4 million this year on two demonstration projects. These will be chosen from proposals submitted by University of California researchers, judged partly on the likely benefit to patients and partly on how much extra funding a project can raise from private sources. The state will spend another \$600,000 to study the ethical, legal and social issues related to such tailored treatment, among other issues. Programme organizers plan to coordinate with the national precision-medicine initiative, Yamamoto says.

California has a long history of supporting ambitious science initiatives — perhaps most notably, the \$3-billion [California Institute for Regenerative Medicine](#), which supports stem-cell research. And last year, the state set aside \$2 million for a neuroscience project dubbed the [California Blueprint for Research to Advance Innovations in Neuroscience](#) (Cal-BRAIN), piggybacking on the national BRAIN Initiative (for Brain Research through Advancing Innovative Neurotechnologies).

## Riding a wave

Maynard Olson, a geneticist at the University of Washington in Seattle, says the California programme is likely to benefit from researchers' proximity to companies with expertise in handling big data or genetic information. These include consumer genetics firm 23&Me, sequencing company Illumina, and information-technology firms Apple, Intel, Google and Facebook, which are all based in the state.

Others suggest that California's move will inspire competition. "The mere fact that California is making this initiative is going to make at least a dozen other states wonder why they are not doing the same," says Isaac Kohane, co-director of the Center for Biomedical Informatics at Harvard Medical School in Boston, Massachusetts.

Large genomic studies can be immensely useful, he adds, pointing to work by deCODE Genetics, based in Reykjavik, Iceland, to explore that country's population<sup>1</sup>. "With approximately 50 times as many Californians as Icelanders, this initiative has the potential of making a quantum leap in biomedicine," Kohane says.

It is not yet clear how the programme will make data available for use by researchers around the world, as some similar projects plan to do.

"We're at the early stages of collecting these [genomic] resources and at some stage in the future, they will be widespread," says Peter Donnelly, a statistical geneticist and director of the Wellcome Trust Centre for Human Genetics at the University of Oxford, UK. "Whether or not they are accessible is the important question."

## References

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1. Gudbjartsson, D. F. *et al.* *Nature Genetics* advance online publication <http://dx.doi.org/10.1038/ng.3247> (2015).