



Fifth-floor view of artist Daniel Kohn's *Instance of a Visual Dataset*, displayed across seven storeys at the Broad Institute in Cambridge, Massachusetts.

## GENOMICS

# Art of the hypothetical

Elie Dolgin gets the inside story on the data displays rendered as abstract visualizations at a renowned genomics institute.

Exit the main lift on any floor at the Broad Institute's headquarters in Cambridge, Massachusetts, and the first things you will see on the far landing wall are dozens of coloured aluminium squares, each about the size of a pizza box. The tiles in these big, brilliantly hued metallic mosaics at the genomics and biomedical research centre look jumbled, almost random. Gaps litter the scene. Many tiles sit seemingly out of place; others are white. The installation is spread across the building's seven storeys, with themes explored on one level often continuing to the next.

The institute is the setting for an artistic experiment. Each tile shows part of an abstract digitized watercolour painting by artist Daniel Kohn, inspired by fundamental ideas in medical research. So a lattice of red squiggles greets you on the third floor, where most of the chemical biologists work: the interlocking structures are suggestive of the relationships between atoms, covalent bonds and electron orbitals. The seventh floor, home to a hotchpotch of geneticists, cancer biologists, metabolome researchers and more, hosts mostly straight green lines on a white background. The linearity is reminiscent of the way in which scientists interpret the genetic code, with tiles inverted or translocated to evoke genomic drivers of disease.

This installation, entitled *Instance of a*

*Visual Dataset*, is the culmination of a decade's relationship between the Brooklyn-based artist and the lab. It started in 2003, when Broad Institute co-founder Todd Golub, then an oncologist at the Dana-Farber Cancer Institute in Boston, Massachusetts, admired some of Kohn's work at a hotel. The two struck up a partnership and Kohn served as the institute's first official artist-in-residence from 2006 to 2008, producing smaller works.

*Instance of a Visual Dataset* was a subsequent commission. To develop his ideas, Kohn met Broad Institute scientists to discuss active research topics, from DNA sequencing to small-molecule drug discovery. He then painted free-form interpretations of what he had learned onto tile grids — usually arranged three by three, but sometimes in other configurations. Kohn digitized these to make more than 3,000 panels, of which about 1,400 are displayed at the institute at any one time. The name of the work describes the 'instantiation' of Kohn's larger data set — its representation at any one moment in the material world.

Since October 2012, Kohn's images have migrated across the installation, mutating on different planes. Kohn has introduced new panels, taken others away and shifted what was already there to find the arrangements

**Instance of a Visual Dataset**  
DANIEL KOHN  
Broad Institute,  
Cambridge,  
Massachusetts.

he wanted to leave behind. "It's not just about projecting an image," he says. "It's about listening to where the image takes you."

At the end of June, Kohn adapted the project for the final time. The panels are all now locked in place, where they will remain. A formal opening of the installation is scheduled for late September. Meanwhile, Kohn is planning his next academic partnership, with the Albert Einstein College of Medicine's Center for Epigenomics, and is in the process of launching an organization dedicated to promoting collaborative explorations of nature called the Art Science Observatory.

Kohn "expanded my horizons with respect to things I work with every day," says Damian Young, a chemist at the Broad Institute. "It will be interesting to see," he adds, "how those paintings grow in their meaning and what collaborations they spawn by allowing scientists to conceptualize different things."

With so many ideas swirling around together throughout the building, it can be difficult to find the central theme of Kohn's work. But therein lies his vision. "The piece," Kohn says, "is really about how divergent data can be brought together into a coherent framework — which is ultimately what researchers are trying to do in science, too." ■

Elie Dolgin is senior news editor of *Nature Medicine* in Cambridge, Massachusetts.