TWENTY FIRST CENTURY NATIVE

Larry Brilliant is executive director of Google's philanthropic arm. **Tony Delamothe** talked to him about his medical career, Google's global health projects, and how the appointment finally made sense of his life

In their first founders' letter, Larry Page and Sergey Brin said they wanted to "make Google an institution that makes the world a better place." They committed 1% of the company's equity and 1% of its annual profits to philanthropy and set up Google.org as the main route to disburse these funds. Two years ago, they put Larry Brilliant in charge, and earlier this year he announced the five core initiatives that will provide the focus of Google's philanthropic efforts over the next 5-10 years.

"We tried to pick areas that allowed us to

bring the energies and talents of Google engineers and Google resources to bear," says Brilliant. Altogether, \$75m (£38m; €47m) has been committed to projects in three areas: global health, poverty, and climate change.

Unsurprisingly, given Brilliant's background (of which more later), the initiative on global health is called Predict and Prevent. It "supports efforts to empower communities to predict and prevent events before they become local, regional, or global crises, by identifying 'hot spots' and enabling a rapid response." The initial focus is on southeast Asia and tropical Africa.

Brilliant joined Google shortly after winning a Technology, Entertainment, Design (TED) prize in 2006. (These are awarded annually to three people, who each receive \$100 000 to grant their "one wish to change the world.") Brilliant's wish was to "help build a global system to detect each new disease or disaster as quickly as it emerges or occurs." The system became InSTEDD (Innovative Support to Emergencies, Diseases and Disasters), whose brief was broadened to offer relief agencies ways of communicating and sharing data, thus allowing coordinated early responses to disasters.

Brilliant's vision was heavily influenced by his experiences of programmes to eradicate smallpox, blindness, and polio in India, as well as contemporary anxieties about pandemic flu. But with his new responsibilities at Google, Brilliant had to hand his new baby on. Nevertheless, InSTEDD receives the largest grant among the recipients of Predict and Prevent.

Eric Rasmussen, InSTEDD's new chief executive officer, is taking the tools of

technology and Silicon Valley and making them available to the entire disaster response community, reports Brilliant. These include some that Google make or support (geoblogging, and visualisation tools such as Google Earth) and systems that allow mobile phone text messages to be sent in one language and read in another (for example, Hebrew/Arabic and Khmer/Burmese). Google has also entered a joint arrangement with the Gordon and Betty Moore Foundation to provide a satellite based early warning system for drought and famine.

InSTEDD's most ambitious project is the Mekong River Surveillance System, a partnership with the Global Security Initiative, which Google is funding along with the Rockefeller Foundation. It encompasses Thailand, Vietnam, Cambodia, Lao People's Democratic Republic, Myanmar, and Yunnan province, China.

"We all know there's a high probability that H5N1 will emerge from there," says Brilliant. "We can't be certain, but we'll know that the world will be a little safer if all six of these health ministers share a common vocabulary, protocol, plan of action, and [early warning] technology."

Google also funds a service called Health-Map, which integrates disease "outbreak data of varying reliability," ranging from news sources (such as Google News) to collated personal accounts (such as the International Society for Infectious Diseases' electronic reporting system, ProMED) to validated official alerts (such as from World Health Organization).

"The internet, the web, and mobile phones have now penetrated so much that the old

Brilliant: his wish was to "help build a global system to detect each new disease or disaster as quickly as it emerges or occurs."

Analysing blindness survey data on an Apple computer given to Brilliant by Steve Jobs (Nepal, 1979-80).

style of waiting for a city to report to a county, a county to report to a state, a state to report to a nation for a nation to report to WHO has now been circumvented by local people reporting to newspapers electronically and that being picked up 10000 miles away. The change in the way that technology has grown now makes possible several other ways of gathering that data, displaying that data, and putting that in the hands of people who can respond," says Brilliant.

While the signal to noise ratio is the single biggest problem, the next is gaming the system, says Brilliant. "You must be really careful to 'first, do no harm'—remember, we learnt that at medical school. Because if you have some centralised agency that reports every rumour of a case of pandemic flu then some nefarious person could put out false information. We don't want to create a scare. We're dealing with systems which by their nature have a high sensitivity and low specificity."

While these projects are being funded with traditional "handouts," several of Google's five core initiatives will involve sharing risks with commercial companies. These include the initiative to accelerate the commercialisation of electric vehicles and the attempt to make electricity from renewables at a price cheaper than coal.

"Nearly half the carbon dioxide in the atmosphere is caused by either power plants or vehicular traffic," says Brilliant. "You couldn't solve this problem unless you created an industry where people were making enough of a profit that they were

willing to continue." The goal isn't profitability; it's sustainability.

"How do you get something to be like the Aravind Eye Hospital, which is the best eye hospital in the world?" asks Brilliant. "It's very profitable, yet they see three quarters of the patients for free. One quarter

pay enough money for the other three quarters and all the research and the extensions—they've built six hospitals. And they give back sight to 300 000 people a year.

We're looking for models like that, which are sustainable. You can't be sustainable if every year your budget comes from charity." He cites Sir John Wilson, who founded SightSavers, as his inspiration.

Enlightenment and transformation

Brilliant has an extraordinary CV. As well as a medical degree he has a master's degree in public health. But the public record begins with him delivering a baby on Alcatraz Island, which was being occupied at the time by Native Americans. Hailed as an expert on Native American affairs on his return to the mainland, he "wound up on every TV show." On the basis of his media appearances he was offered the role of doctor in *Medicine Ball Caravan* (described by Blockbuster as "a scaled down Woodstock-ish rock concert documentary"), which followed a large troupe of performers across the US. Several bus rides later he arrived at a Himalayan ashram, where guru Neem Karoli Baba told him to work for the United Nations and help eradicate smallpox.

"He says he's a doctor. He seems like a nice guy. Appears to have gone native"

But before Alcatraz there was London, and nearly a year's attachment as a medical student with Martin Bax, paediatrician and editor of both *Developmental and Child Neurology* and the literary magazine, *Ambit*. "During the day he would take me to Guy's, and at night he got me involved in social activism. He was the secretary of the Medical Association for Prevention of War and I went with him to the Paris peace talks [about Vietnam] and to Stockholm to meet John Takman (who was closely involved with Bertrand Russell's war crimes tribunal). So Martin was my first teacher of international health ... he was so important to my life that when I went to work for WHO he was my only reference."

Brilliant's attempts to follow his guru's advice were initially unsuccessful, until he cut his beard and swapped his robes for a suit and tie. On his umpteenth visit to the WHO office in New Delhi, he bumped into the person heading up WHO's smallpox eradication programme, although they didn't yet have a programme in India. Brilliant was interviewed on the spot and offered a job. Ten years later, after smallpox had been eradicated, Brilliant came across the interview notes when he was packing up the files: "He says he's a doctor. He seems like a nice guy. Appears to have gone native."

The appointment changed Brilliant's life dramatically. "I was told that I would become transformed and that instead of taking my pleasure from watching the fall of a child's temperature spike I would have to take my satisfaction from the epidemic and remove myself from being exposed to patients so much. Those are difficult emotional transitions.

"You had to leave aside the hands on experience and start working through people. If you then move into foundation work you take another step back, because now you're funding the person who's looking at the epidemic curve. And at Google.org we've taken a step even further back than that because we've spent the last 18 months thinking about what we would fund. It's a kind of thinking that we don't get trained for in medicine." Compared to the one to one doctor-patient relationship this was harder and "more fraught with moral error," comments Brilliant.

From ideas to business

I had encountered Brilliant a few years earlier in the pages of *The Well*, an account of one of the oldest and most influential online

communities. It didn't seem like the same person who was in front of me. The Brilliant in the book was an astute businessman who had approached Stewart Brand (founder of the *Whole Earth Catalog*, a vast print compendium of "alternative" wisdom), with the idea of introducing Brand's Whole Earth community to a computer conferencing system.

Brilliant's interest in this technology had been sparked by a helicopter crash in the wilds of Nepal, where he was running a blindness survey for WHO. "Steve Jobs had given me an Apple computer and modem and I was able to acquire a signal from a satellite by using a phone system and bounced the signal back to the University of Michigan, where I was a professor. And then something quite remarkable in my experience happened: we created a telephone computer call (which we now call computer conferencing). Within 72 hours of this one hour call—'everybody typing, no voices'—a replacement engine had been dispatched from Paris and installed." In his 12 years working with the United Nations Brilliant had never seen anything work so smoothly in an emergency. "So I became convinced that technology and service to emergencies was also a calling for epidemiologists."

Making sense

Six months later, Brilliant was describing the events to his house guest, Steve Jobs, who had just started Apple. "I was asking him for more money for [our philanthropic idea], and he said, 'Don't ask me for money; take that and make it into a company.'" So Brilliant turned the computer conferencing idea into a company, took it public, and made enough money to bankroll the Seva Foundation. (Twenty eight years later, the foundation has helped restore the sight of more than two million people in 27 countries. It has worked in partnership with the Aravind Eye Hospital, which Brilliant so admires.)

And this successful business venture wasn't a one off. As his biography on Google's website states (perhaps to counter anxieties that they're handing out a no limit credit card to an old hippie) he has been chief executive of "two public companies and other venture-backed start-ups."

Brilliant anticipates my last question: "How can you be one person and have two such very different sides? When I came to Google my children said to me: 'Dad, for the first time, your life makes sense.'"

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WHAT'S NEW ON BMJ.COM

Anna Donald: "I lit up like a Christmas tree on the scans"

On the blogs

If you read one blog this week, make it Anna Donald's. Diagnosed with metastatic breast cancer in February 2007 ("I lit up like a Christmas tree on the scans"), Anna's "From the other side" blog is all about facing life-threatening illness as a doctor. She returned to her native Australia last year after living in London, Boston and Oxford for 17 years.

Here is an extract from her first blog:

"I am slowly adjusting to the art of living one day at a time. Not my usual style, to put it mildly. My prognosis is dismal, but I've come across sufficient, well documented 'miracle' cures (including Ian Gawler, a vet and friend in Australia who recovered from advanced sarcoma minus a leg, and who now runs courses for people with cancer) to convince me that recovery is possible. The question is, is it possible in me?"

I hope to write about things that may interest doctors, other health workers and policy makers, about what it's like to have life threatening disease; to be on the other side of the doctor-patient divide, and to experience 21st century health care for a chronic disease..."

To follow Anna's story, and to join the growing number of people who have responded to her blog, go to blogs.bmj.com/bmj/category/from-the-other-side/

Elsewhere on the blogs...

Two weeks ago Simon Chapman, professor in public health at the University of Sydney, revived bmj.com's carbon blog by urging medical conference delegates to ration their flying. Stay up late and use interactive video links instead, he said.

Now Ian Roberts, professor of public health at the London School of Hygiene and Tropical Medicine, blogs about biofuels, obesity and transport.

Dismayed at Gordon Brown's failure to link the three when he emerged from his recent food summit, Ian concludes: "Car use causes obesity, obesity increases car use and rising obesity increases food consumption and worsens global warming."

"If that sounds like a vicious circle with dire implications for global food security and the environment then you are on the right track."

Join the debate and have your say at blogs.bmj.com/bmj/category/carbon/

Making a Difference poll result

Palliative care for non-malignant disease is the area in which doctors can make the greatest difference to patient care.

More than 4000 people from all over the world voted in a bmj.com poll to decide which of six projects would make the most improvement to patient care. The results, announced at the International Quality Forum in Paris, last week, are:

	Number	Proportion (%)
Palliative care for all at the end of life	1549	39%
Combating drug resistant infections in poor countries	869	22%
Better care for the elderly with multiple health problems	681	17%
Improving chronic pain management	484	12%
Reducing excessive drinking in young women	329	8%
Helping to reduce adverse drug reactions in the elderly	111	3%

Next bmj.com poll

Does it matter that medical graduates don't get jobs as doctors?