WHAT'S YOUR BACKGROUND?
I'm a doctor and scientist and was doing a PhD at Imperial College on breast cancer risk when I came across a new way of working out whether a woman would be at risk of cancer from analysing her milk. I had called the milk bank adjacent to my lab while on maternity leave, trying to donate my own milk. During the conversation, I discovered that breast milk contains millions of cells, which was the missing piece of my research. We started studying samples from the bank that would otherwise have been discarded to assess breast cancer risk markers. I became fascinated with human milk, and realised that if we understood it better, we could unpack why breastfeeding protects women from aggressive forms of breast and ovarian cancer.

WHY IS REAL MILK SO IMPORTANT?
Research over the last two decades has shown that babies fed with donor milk rather than formula have better outcomes when their mother's milk is not available. They are protected from a gut infection called necrotising enterocolitis, which has a high mortality rate, as well as pneumonia and sepsis, and have shorter overall stays in hospital.

Demand for donor milk from clinicians and parents is increasing since the World Health Organisation recommended it as the best alternative to mother's milk for sick babies, but scores of mothers who would like to be donors are turned away because of a lack of milk bank resources. These women sadly include mothers whose babies have died, for whom donating their milk to help another child could help them to grieve. Milk banks in the NHS are working flat out, but it's still not enough.

TELL US ABOUT HEARTS MILK BANK
Despite a great deal of excitement about the research, we couldn't get grant funding to set up a large study. What was worse, the milk bank network in the south east was suffering badly from staff losses and lack of investment to meet increasing demand from hospitals for screened donor milk. I had set up a couple of successful businesses in the past and spotted an opportunity to fix both problems – for a milk bank as an independent, research-focused not-for-profit organisation.

Milk banks are a hidden gem in the health service, providing breast milk to sick babies, usually born very premature, whose own mothers cannot supply any or enough of their own. Potential donors undergo screening, much like in blood donation. Donor's milk is picked up from their home or hospital by motorbike couriers and brought to the milk bank at the University of Hertfordshire Biopark in Welwyn GC. There, we check the milk for contamination and pasteurise it. It's then frozen and sent to hospitals with neonatal units. Donors sign a consent form that explains a small volume of their milk may be used for research into cancer.

WHAT'S BEEN YOUR EXPERIENCE OF THE PROJECT?
Hearts Milk Bank was incorporated as a Community Interest Company a year ago by myself and Gillian Weaver, a milk banking expert. The chair of our board is Harpenden-based financial expert Graeme Allinson and we have been mentored by Cambridge University's Social Ventures Incubator. But it has taken the full year of the hardest work of my life to secure premises at UH, get start-up funding, run a crowdfunding campaign, win the MassChallenge UK global accelerator and get all of the necessary insurance and permits in place.

We have a fantastic team of supporters and volunteers who have propelled us along and we sent our first litres of donor milk out to hospitals at the end of May. We have been overwhelmed by the response of the local community and hope to give back to families across Herts, London and the south east in many ways.

If you would like to donate breast milk, volunteer or financially support Hearts Milk Bank, email info@heartsmilkbank.org or call 01707 358776.