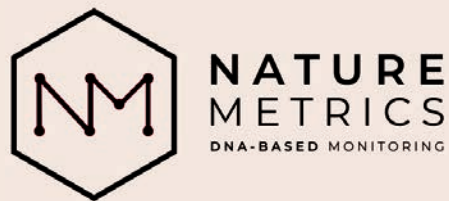


# INNOVATORS

## 'INSECT SOUP' AND BIODIVERSITY – COMBINING SCIENCE AND BUSINESS



**NATURE METRICS**  
DNA-BASED MONITORING

project working with Professor Doug Yu on the population genetics of Amazonian ants. "After some fun field work, followed by 18 months pipetting tiny amounts of colourless liquid into other tiny amounts of colourless liquid to find out which ants were related to each other, I didn't care about the ants any more and wanted to do something that involved building teams and having real impact and relevance to the world."

Kat and Doug got together and came up with the idea of NatureMetrics, a company which combines science, biodiversity and business.

She said: "There was this new method where you could take whole collections of insects and, rather than having to look at them one by one under a microscope to identify them and turn them into data, you could just grind them up, extract the total DNA from the mixed-species sample and sequence it all together in one reaction to give a profile of all the diversity it contained – and you could sequence hundreds of 'insect soups' at once, to generate data on biodiversity at a scale no-one had ever had access to before."



**Adventures in the Amazon, including two weeks on a balsa-wood raft, provided Dr Kat Bruce with a lifetime memory – and a first step towards a fascinating career.**

She had joined the expedition to South America after dropping out of Oxford, where she had been studying classics. On her return to the UK she decided to change her academic focus to wildlife biology at Anglia Ruskin University, followed by a Masters in entomology (the study of insects) at Imperial College. Here she first encountered the subject of genetics around which her life has revolved since.

Kat, now chief technical officer at NatureMetrics, based on Surrey Research Park, explained how studying insects led to a PhD



I ask Kat to explain NatureMetrics in simple terms: "We survey biodiversity by analysing the traces of DNA that animals leave behind in the environment, especially water. Just as we leave fingerprints containing our DNA when we touch things, animals leave DNA 'fingerprints' in the water (or on land which are then washed into the water).

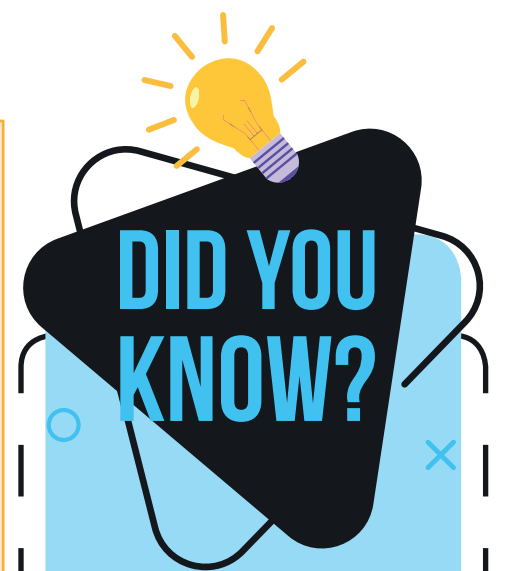
"The water in ponds, lakes, rivers and oceans is basically a soup of 'environmental DNA' (or 'eDNA') from the species that live in and around the water. We've designed a simple kit that captures the DNA from the water just by filtering it – and then in our lab we sequence the DNA on the filters to identify the species. We can detect hundreds of species from just one litre of water – including everything from bacteria to blue whales."

The data provided by NatureMetrics's DNA analysis is used by clients who need to assess the impact their business has on the environment. Kat explains: "We work with national and international conservation organisations, helping them to map biodiversity and target their conservation measures to where they have the most positive impact."

NatureMetrics is run by three women – Kat, the new CEO Katie Critchlow, who joined in February, and chief operating officer Dr Juliet Jones, who studied biochemistry and her doctorate at the University of Surrey.

I grab a brief chat with Juliet, to hear a little more about the company. She tells me it has more than doubled its employees to 53 in the past year and says lockdown has enabled everyone involved to take a step back and think carefully about the direction they want to take the company in, as they raise investment and scale up. New offices are being prepared on-site, with purpose-built laboratories and the number of orders for the specialist DNA kits is growing daily.

"We're a great team, bursting with ideas, and the park suits us perfectly because it's in a beautiful setting, but with great links to London. There's a sense of prestige being here and several of our customers are already on site. We have room to expand, should we need it, and we hope to create strong links with the university, offer employment to graduates and perhaps collaborate on research projects," Juliet said.



**LOCATION:**

Guildford, Surrey

**ESTABLISHED:**

1985

**KEY SECTORS:**

Technology, science, health, space, engineering

**KEY FEATURES:**

- Furnished offices of all sizes including shared workspaces and self-contained office units.
- Award winning start-up business support available with on-site incubation hub, SETSquared – the global number one university business incubator.
- Access to R&D funding initiatives, leading advisors, recruitment support and training in addition to links with the University of Surrey's knowledge and talent base to maximise business growth and innovation.
- Facilities include a café, meeting rooms, breakout spaces, picnic areas, parking and preferential rates for nearby Surrey Sports Park.

**HIGHLIGHTS:**

- The 170 businesses located on the Park generate over £1billion of economic activity each year and create 4,000 jobs in Guildford.
- A number of tenants have won the Queen's Award for Enterprise, created global industry firsts and pioneered major medical breakthroughs.

**FURTHER INFORMATION:**

[www.surrey-research-park.com](http://www.surrey-research-park.com)

**For more information on available properties:**  
01483 579 693 [www.surrey-research-park.com](http://www.surrey-research-park.com)

