

BEAUTIFUL MINDS

Some of science's biggest brains have turned their attention to beauty. Kathleen Baird-Murray meets three notable names shaping the future of skincare

THE TOXICOLOGIST

Dr Julia Fentem

As China moves towards lifting regulations that require imported beauty brands to be tested on animals before they reach consumers, one person in particular will be celebrating. Dr Julia Fentem of beauty giant Unilever, who recently accepted an honour from The Humane Society on behalf of her team, has spent more than two decades creating and disseminating alternatives to animal testing that uphold high standards in safety.

"The real driver was that we could do better scientifically, because we could have more human-relevance safety assessments," she says. "As a scientist, understanding the new technologies that were starting to come through in terms of testing on human cells, being able to culture them meant you wouldn't have to do new studies on animals. I am also an animal lover and had dogs, cats and rabbits as a kid."

In the Unilever family, brands including Dove, Simple, St Ives, Love Beauty and Planet have all earned their Peta-certified cruelty-free stripes, and progress is under way across the beauty industry, with Estée Lauder, L'Oréal and others also making strides. So, is the battle won? Not necessarily. In Europe, current chemical regulations mean new ingredients cannot be registered without some animal testing. For Fentem, rewriting this caveat is a priority. "We need to move from petrochemical-derived ingredients to those that are bio-based," she explains, "and that means opening up the discussion in Europe. New, sustainable ingredients shouldn't need to be registered with animal testing." If anyone's going to get the conversation started, it's her.



THE NOBEL LAUREATE

Professor Fraser Stoddart

Most of us go outside and hope for a blue sky. Not so Scotland-born, US-based Professor Fraser Stoddart, who looks up and instead imagines a future of carbon capture. "I dream of going to the supermarket and buying a little contraption you can put in your garden that can capture the CO₂ from the atmosphere," he says. The inventor of the Organic Molecular Vessel (OMV), a mode of molecular transport that won him the 2016 Nobel Prize in Chemistry, sees possibilities everywhere. And in the case of OMV, the sky's the limit – it can be used in the fields of personal care, pharmaceuticals, food and, potentially, even in petrochemicals.

For now, though, it's our skincare routines that will profit, thanks to Stoddart's brand Noble Panacea and its streamlined collection of eight super-products – including serums, moisturisers and eye creams – which deliver benefits slowly and deliberately. The OMV is used as a base to carry active ingredients such as retinol and teprenone (a cellular activation molecule believed to help stabilise telomeres, the structures found at the end of our DNA strands) to the exact location in which they are needed within the skin cell, at exactly the right time. Unlike most delivery systems, OMV doesn't bombard the skin with everything in one fell swoop, but instead the integrity of each ingredient is both protected and rendered more effective, meaning the chances of our skin being irritated are lessened.

"There is a 10-fold increase in vitro of skincare additives using OMV as a base," says Stoddart. "If you give your skin time to absorb the additives rather than throwing far too many at it all at once, it's going to make a huge difference because they arrive when the skin is ready to absorb them." This means that instead of the perks wearing off after half an hour, your moisturiser can still be working hard for you 24 hours later. All thanks to this 77-year-old professor and his blue-sky thinking.

THE INNOVATOR

Trevor Steyn

From the gut to the mouth to the skin, microbiomes continue to garner scientific interest, and no wonder, when the findings are sometimes life-changing. But while a simple stool sample can quickly reveal what's happening with our gut microbiome, a similarly swift swabbing technique for the skin microbiome has remained elusive, due to complications with genetic sequencing and minuscule sample sizes. Until now. After five years working with specialist laboratories, Trevor Steyn, the organic chemist and founder of Esse Skincare, believes he has finally cracked a swabbing process that's sophisticated enough to stabilise the microbial DNA so that the bacterial genome can be sequenced and different bacteria can be identified. "Once we have the breakdown of the species in the sample, we can calculate the diversity index and give the client an estimation of how robust their skin microbiome is," he explains.

This up-to-the-minute information affords insights into conditions including dryness and sensitivity, which are strongly connected with certain species of bacteria, Steyn says, meaning Esse therapists and treatments can make noticeable improvements to your skincare routine. "Whether that's choosing biome-friendly techniques, such as not over-cleansing, or using products that will 'rewild' the skin, the results will provide a 360-degree assessment on skin type and concerns." ■



Noble Panacea Vibrant Eye Infusion, from £115 for 30 doses

