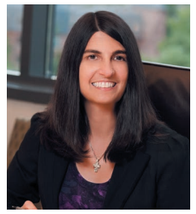
RECOGNIZING THE BEAUTY OF SCIENCE, AND THE SCIENCE BEHIND BEAUTY

A conversation with **LISA NAPOLIONE**, Senior Vice President, Global Research & Development at The Estée Lauder Companies



The Estée Lauder Companies has a long history of science and innovation. Fifty years ago, the prestige beauty company created the world's first allergy-tested, fragrance free skincare line — and it has continued to roll out transformative beauty products ever since. The Company recently partnered with Nature Research to create two new prizes designed to inspire women in science, technology, engineering or mathematics (STEM), one to honour early career female scientists making pioneering discoveries, and the other to recognize leaders — women and men — behind initiatives supporting greater equality in STEM. Biochemical engineer Lisa Napolione, who leads the Company's R&D efforts, explains the impetus for the awards and how The Estée Lauder Companies takes a science-driven approach to skincare and beauty.

The new prizes are designed to inspire women in STEM, and focus on different things. Why put the spotlight on educators and young researchers?
Both of these areas are critical in their own right and integral to everything we do at The Estée Lauder Companies. We are a company that was founded by a pioneering woman who supported other women and who remains an inspiration to all of us — and so honouring exceptional female researchers through the Inspiring Science Award really spoke to us. We hope it not only shines a much-deserved light on the achievements of exceptional women in STEM, but also helps to establish a new generation of role models. The second award — the Innovating Science Award — recognizes a person or an organization that promotes STEM to girls and young women. I really feel strongly that young girls need role models and mentors in STEM, because without these influences we wouldn't have the deep bench of research expertise among the next generation of scientists.

This all sounds very personal to you.
It is! I was so fortunate that early in my education, I had a mentoring role-model, Nora Kyser, who was one of the first female chemical and ceramic engineers in all of the United States. She was my high school chemistry teacher in my little hometown in western New York, and she arranged with the school district that, if she paid for her own research, she could work after hours in the school's laboratory. She saw something in me, and hired me as her lab assistant. Her hands-on personal attention affected me so much. It was an amazing experience for which I will be forever grateful — and it inspired me to do for others what she did for me. I do what I do today because of her.

How does science inform how products are developed at The Estée Lauder Companies?
Many people in the scientific community don't appreciate the breadth and depth of the serious science that happens in beauty. The Estée Lauder Companies' R&D teams are constantly looking at breakthroughs in other fields of science and technology to inspire our skincare research. We conduct epigenetic research, including into sirtuins, nrf2 activation and cellular repair. Notably, we have conducted research on Nobel Prize-winning topics: Estée Lauder was the first cosmetic brand to research skin cells' circadian rhythm and the role of 'clock genes'

SERIOUS SCIENCE HAPPENS IN BEAUTY.

in cellular repair, and the first to research autophagy and its role in helping repair skin-cell damage. Last year, Estée Lauder R&D started mechanobiology research to help understand why and how blinking ages the look of the eyes, and now how light pollution, specifically blue light at night, desynchronizes skin cells' natural repair.

Much of our research uses nature as the ultimate inspiration with more than 12,000 bioactive molecules in our database supported by hundreds of technical measures and assays. Plus, we have fermentation and biotechnology capabilities that allow us to produce high-performance ingredients in a multitude of organisms, including bacteria, yeast and mould. The power of fermentation can be seen in our La Mer brand, which is built around the Miracle Broth™ created from a unique three to four-month fermentation with a specific sea kelp. In all, this research has resulted in new products that can help protect against the visible effects of pollution, improve skin tone, reduce undesired pigmentation, and counteract visible skin and hair ageing. We are always looking at relevant applications in emerging scientific areas that have yet to fully materialize — because if it's hot in science, it will be hot in beauty.

What's an example of this process in action?
We took a multi-pronged approach for the Clinique Even Better Clinical product for improving skin tone and visibly correcting dark spots. It's such an interesting area of science, because there are multiple pathways behind the abnormal accumulation of melanin, the pigment responsible for these discolouration issues. We explored several approaches: new antioxidant ingredients that protect against free radicals; biofermentation technologies that target melanin clusters; and exfoliating agents to get rid of the dead skin cells that contain melanin dust. This all required a very detailed understanding of the underlying biology and a degree of scientific rigour that's absolutely necessary for us to deliver products that really work.

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At The Estée Lauder Companies, invention is at our core. Our employees engage in global research and development efforts across a wide variety of disciplines including advanced technologies in physics, chemistry, biology, and engineering. These skills paired with expertise in state-of-the-art technologies and manufacturing practices enable our brands to be at the forefront of our industry while ensuring the highest safety, quality and performance standards.

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