EPICENTER

INCUBATING THE FUTURE

Bay Area tech and science innovate new generation of products

By Rachel Brown

At Sephora's Powell Street and Union Street locations, perfumed dry air puffs out of screens so customers can breathe in as many as 20 unique scents without having to spray the fragrances, which they might not like, on their bodies.

The modern-day Smell-O-Vision comes courtesy of Sephora Innovation Lab, a breeding ground for experimentation that piloted the technology in a faux-store setup in the Dogpatch area of San Francisco before implementing it on the beauty retailer's store floor. "We test and learn all the time, and try different iterations," said Bridget Dolan, vice president of the lab. "With fragrance, you need to smell it. That's the key to selling it in a retail environment, and this is actually expanding clients' comfort zone in fragrance."

Sephora is not the only company with Bay Area roots pushing the boundaries of how shoppers interact with beauty products. Volition Beauty is creating a fully crowdsourced beauty brand; Madison Reed is pushing hair color choices beyond salons and supermarkets into customers' hands; MatchCo and Melange are mining selfies to blend foundation shades corresponding to skin tones; and the L'Oreal Technology Incubator is making customized beauty items, working on 3-D printed skin and detecting sun exposure with wearable skin sensors.

The region has quickly become a hub of artificial intelligence, and not the kind involving robots. Its mix of technology firms, leading universities, money-eyed investors and a handful of prominent established beauty businesses has provided the foundation for a fountain of beauty concepts springing forth with ideas that are transforming the beauty industry.

"Three years ago, when you thought of beauty, you thought of New York, L.A. and, overseas, Paris, but I feel like now that we are merging tech with beauty, it's a wonderful place to be," said Brandy Hoffman, co-founder of Volition Beauty. "We are building an online platform for co-creation, and it just makes sense that we are here. We are getting the best talent."

A Bay Area presence affords beauty companies access to high-tech expertise difficult to replicate elsewhere. In 2014, L'Oreal gave Guive Balooch, who helms the L'Oreal Technology Incubator, free rein to choose locations. He put 20 people in San Francisco, where they toil out of the University of California's QB3 incubator, and put additional teams in New York, Singapore and Paris.

These trailblazing teams have been busy. L'Oreal Technology Incubator's skin sensor made its debut in January at the Consumer Electronics Show, but it won't be available to consumers until later this year. La Roche-Posay, a brand owned by L'Oreal, is releasing it as My UV Patch, an ultra-thin, 1-square-inch adhesive patch that changes colors

plexion products. Balooch, of the L'Oreal incubator, studied molecular cell biology and biomaterials at UC Berkeley and UCSF prior to entering the beauty industry.

Emeryville's Amryis, started in 2003 by scientists from UC Berkeley, has taken perhaps the most atypical path into the beauty field. The biotech company's early success was developing a cheaper alternative to the artemisinin found in the Chinese sweet wormwood plant, a powerful anti-malarial. In February, it launched a moisturizer under the brand Biossance on HSN. The com-

adhesive patch that changes colors when exposed to UV rays. Wearers snap a photo of the patch and upload the photo to an app to evaluate the level of UV ray exposure they've received. On top of that, the incubator has driven L'Oreal's attempt to generate 3-D printed skin tissue, the first of its kind in the beauty industry. Working with San Diego-based Oraganovo, it plans to use the reproducible tissue for product evaluation and research.

It's not a coincidence that L'Oreal's inventions have a Bay Area link. "You have the most incubators by far in the Bay Area than anywhere in the world. You can't deny the ecosystem, because the ecosystem's created all these exciting companies," Balooch said.

Dolan agrees that proximity to groundbreaking technology companies is immensely valuable. "In the Bay Area, there are tons of innovative companies popping up. We want to embrace technology and all these companies out here, and figure out which ones make sense (to partner with) for now or later" she said. "It is easy to jaunt down to Silicon Valley or have people come to us. We have endless universities calling on us and venture capitalists who want to hear our point of view."

Beauty companies are not isolated from tough problems that plague other industries in the Bay Area. They cope with the high price of running businesses and fierce competition for skilled employees. Nascent companies must run lean.

Photos by Liz Hafalia / The Chronicle

"We are smart about hiring and don't do quantity but look at the quality of employees we hire," said Hoffman. Beauty startups also have to hone attractive pitches to recruits. At hair color specialist Madison Reed, founder Amy Errett has devised a formidable recipe to attract engineers.

"We test and learn all the time, and try different iterations."

Bridget Dolan, Sephora Innovation Lab vice president

"We have to work hard at the value proposition here," she said. "If they are coming from large companies, they don't get equity or stock options. They are on higher fixed salaries, but they don't have the opportunity to come to a company where they can be an owner and create wealth from an exit."

For most brands, the advantages of the Bay Area outweigh the disadvantages. Nabbing the right engineer can propel a company to new heights. With a background in mechanical engineering and industrial design, David Mason seemed like an improbable fit for a firm creating an at-home skin-care device.

But when aesthetician Melanie Simon approached Mason, the younger brother of a close friend, he was drawn to her charisma and the market potential of the nano-current device that uses tiny electrical jolts as a beauty treatment. He's been instrumental in fashioning the sleek product for Ziip Beauty, as well as an app that changes its treatment protocol to suit users' concerns, and collects data on how customers interact with the device.

"What the Bay Area has in abundance right now is ideas around how customers are engaging with products and computer systems," Mason said.

Universities have helped fill beauty companies with scientific and technological know-how. MatchCo, which has an office in Palo Alto, tapped Young Harvill, who was educated in printmaking and holography at Stanford, and Justin Gordon, formerly an assistant clinical professor of dermatology at the school, to help design its app and complexion-matching foundation.

The brand Biossance on HSN. The common thread between Amryis' beauty brand and its medical breakthrough are yeast strains engineered to yield sustainable materials. In the case of Biossance, they produce a replacement for squalane, a coveted hydrating agent that has been sourced from shark livers for skin care products.

Peter DeNardo, director of investor relations and corporate communications for Amyris, described Biossance as a flagship to "showcase how our technology can solve supply problems."

"Globally, more and more cosmetics companies are realizing that consumers want to buy products that have fewer and less artificial ingredients," De Nardo said, "and they want to back companies that are good stewards of the planet."

If wielding microbes to concoct a better lotion doesn't sound pioneering enough, Bay Area companies have plenty more up their sleeves. The L'Oreal Technology Incubator is exploring augmented and virtual reality in retail settings, and MatchCo envisions ingredients within complexion products to tailor them to an individual's needs.

"The sky is the limit, and there are going to be a lot of exciting areas in the beauty industry in terms of technology," asserted Balooch. "The core business of beauty is creating the products of the future."

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Caroline Hadfield, top, senior vice president of personal care at Amyris Inc., which was started by UC Berkeley scientists. Alex McGill, above, at work in the Emeryville company's lab.