

Secrets of scents: Designing the smells that sell household products

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Aromatic compounds are at the heart of the multi-billion dollar fragrance industry, which relies on artistry as well as chemistry to create those savory and sweet scents. Credit: Juanmonino

Crafting a fragrance for detergents that leaves laundry smelling clean and fresh. Developing a room freshener, scented oil, or scented candle that whispers "cool spring air." Giving toothpaste or mouthwash a refreshing aftertaste that lingers and lingers.

The process for putting the smell that sells into thousands of consumer products is much like composing a symphony, according to maestro fragrance designer Michael Papas, who spoke here today at the 240th National Meeting of the [American Chemical Society](#) (ACS).

"We're talking about the harmonious mixing and matching of potentially hundreds of individual aroma chemicals," Papas explained. "Composers have their musical notes, and we actually use what are called 'fragrance

notes' — three of them — that unfold over time to the nose like stanzas of a symphony to the ear."

Papas said that few people are aware of the all-pervasive nature of smells. Scents are a part of human experience from the time people awake in the morning to the time they fall asleep at night. Childhood memories stay with people throughout life. And smells can have a powerful influence on human emotions.

"Fragrances can make people feel good," said Papas, who is vice president-executive perfumer at Givaudan Fragrances Corporation, in East Hanover, N.J. He specializes in developing fragrances for everyday products, including laundry products, scented oils and candles, room sprays, and household cleaners. "Fragrances are part of what has been called 'nasal nostalgia', bringing back long-forgotten memories of pleasant experiences for people to enjoy once again," he added. "We strive to connect with an emotion that makes the consumer feel good and could be perhaps a little nostalgic."

Papas cites as inspiration the computer-animated film *Ratatouille*, which is about a rat, Remy, who dreams of becoming a gourmet chef. In one scene, Remy impresses a prominent food critic with a delicate, but plain, meal that evokes fond memories of his childhood.

"It was a very simple meal, but it dealt with emotion," Papas said. "It's the same with fragrance. A successful fragrance, much like a favorite movie, food, or song, must create such a strong connection with the consumer. "It is important for fragrance designers to try to transport customers to another, perhaps better, place or time."

Finding that emotional level while creating soothing scents is not simple, said Papas, a veteran in the industry for almost three decades. For starters, he explained even the most basic of fragrances is complex. Each

is a unique blend of synthetic and natural substances, including essential oils extracted from flowers and plants. Subtle scents found within the fragrances, called notes, characterize the odor profile. These notes, similar to musical notes, must work well together as building blocks to form the bouquet.

Top notes are light, dissipate quickly and are often citrusy, whereas middle and bottom notes are deeper aromas and could be depicted as fruity or woody. Anywhere from 800 to 1,500 chemicals, all with their own unique profiles and characteristics, could be found in a product, depending on its complexity, Papas said.

"Creativity is such a fundamentally important aspect to what we do," Papas said. "Look at someone like the pop singer Lady Gaga. Some critics might think she's unusual, but she's creative, and she crosses boundaries and is able to inspire. For me, designing a fragrance is about amazing the consumer in unexpected ways, and I try to cross boundaries."

But a good design, he said, is much more than a pleasant aroma. Designers need to tailor their creation so that it's coherent with the product's ultimate application. The smell of air fresheners must add ambiance and freshness to the home. Likewise, laundry fragrances must have notes that are light and clean.

In requests to develop a new fragrance, clients often request development of a [fragrance](#) that contains descriptions of a particular scent and also instructions that the aroma capture distinct perceptions or even help recall certain emotions.

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