Have you ever wondered why strawberry candies, strawberry ice cream, and strawberry yogurt all taste differently? How about why different brands of the same type of liquor taste dissimilar? A variety of aroma chemicals combined in specific concentrations create these complexes that we know as flavors. That blend of compounds and their ratios are what distinguish brands of the same product and also differentiate matching flavors within various food systems. Flavor creation is a unique science. My research consists of analyzing rum, on a chemical level, to determine what distinguishes its aroma/flavor from other alcoholic spirits. Using a gas chromatography-olfactometry (instrument pictured), I am able to separate and smell each of the chemical compounds within a rum sample to understand how their aroma plays a part in the rum's overall flavor profile. For example, there are lactones in rum that give it a woody aroma, while β-damascenone gives it an apple-like and floral aroma (both pictured). Each of the rums I analyze will have similar major compounds and unique minor or hidden compounds, all at various concentrations. The question I have yet to answer is: what combination of compounds can we use to categorize a food or beverage flavor as "rummy"?

Is That Rum I Smell?
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