# BEER FLAVOR A NEW TOOL FOR BRINGING MODERN SCIENCE TO FLAVOR ANALYSIS NICOLE GARNEAU & LINDSAY BARR, FLAVOR LAB LLC

Advances in brewing and sensory science, plus expanded ingredients and styles, has led to a need for up-to-date tools used in beer flavor description and sensory analysis. Beer description, tools regularly used by:



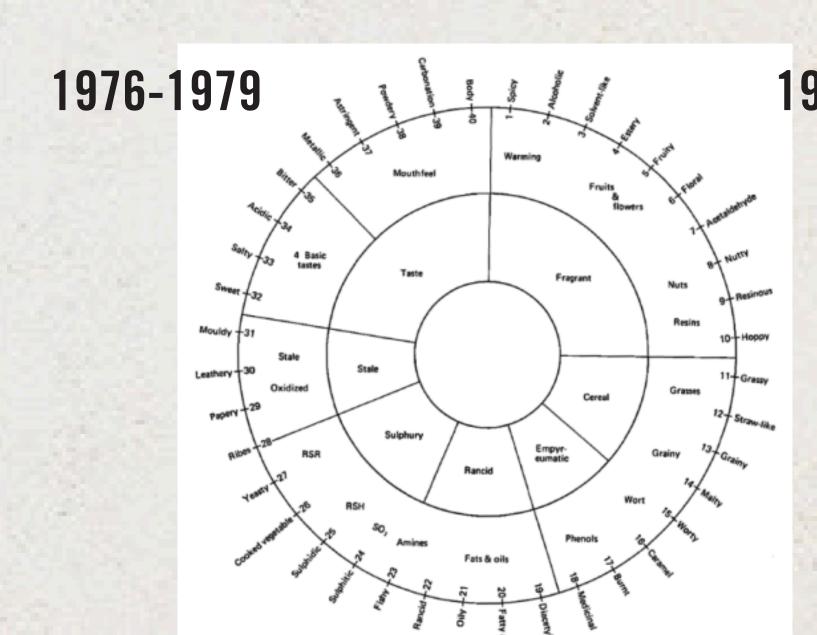
- Sensory Panels
- Judging in competitions
- Consumers

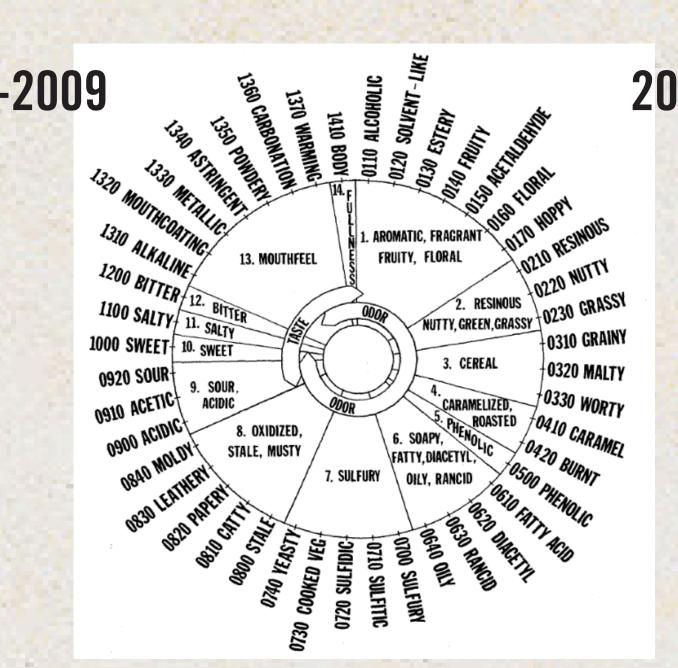
Nearly four decades since its original launch, the industry's primary descriptive tool, the Beer Flavor Wheel remains little changed; yet it is still widely used in sensory programs and judging competitions alike.

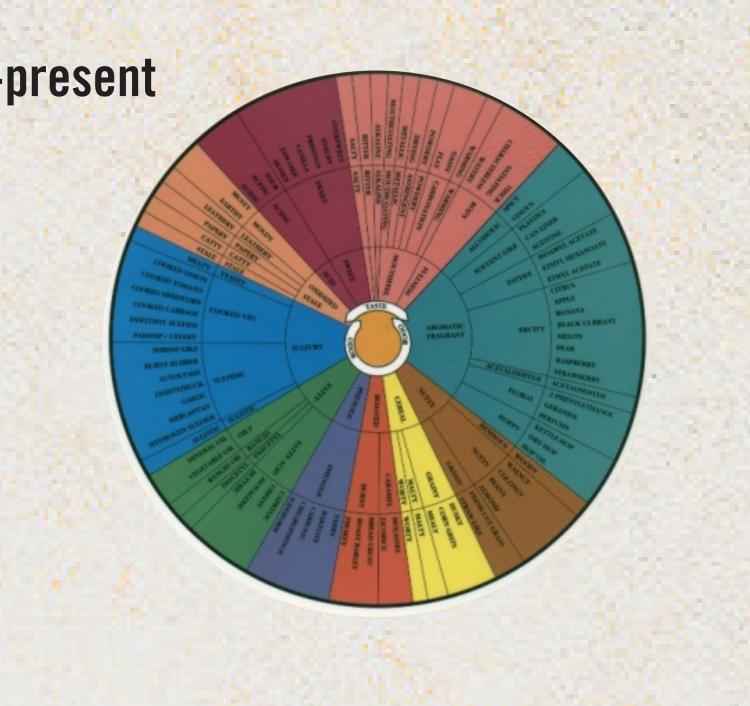
Standards and sensory information in the wheel are based on knowledge and common beers form the time of its launch. Now, after nearly 40 years of advancements in beer flavor research, the wheel contains both scientific inaccuracies and gaps.

# History of the Beer Flavor Wheel

The Beer Flavor Wheel has served as the long withstanding end product resulting from the incredibly successful attempt, spearheaded by Dr. Morten Meilgaard, to standardize the vastly complex flavor language applied by brewing professionals. The wheel has served as a training and language-standardization tool for countless brewing professionals in its forty years of existence yet Meilgaard and colleagues never intended for the language to remain static. In their 1979 report they urged "all brewers and brewing researchers to use the present system for a period sufficiently long to identify (and report on) both advantages and defects. Then, in a few years' time, a new working group should be given the task of bringing the terminology up to date." Until now, all organized attempts focused on updating the beer flavor language have been found left wanting.







# The Beer Flavor Map Was Constructed By:

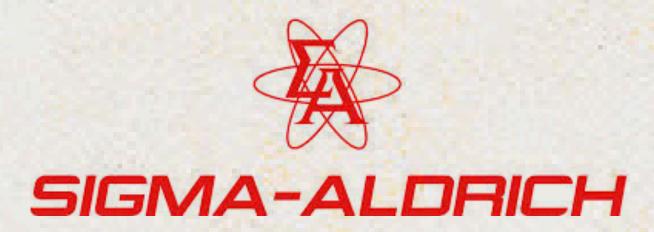
1. Conducting a comprehensive literature review



2. Building a scientifically-sound database ensuring references to peer-reviewed publications





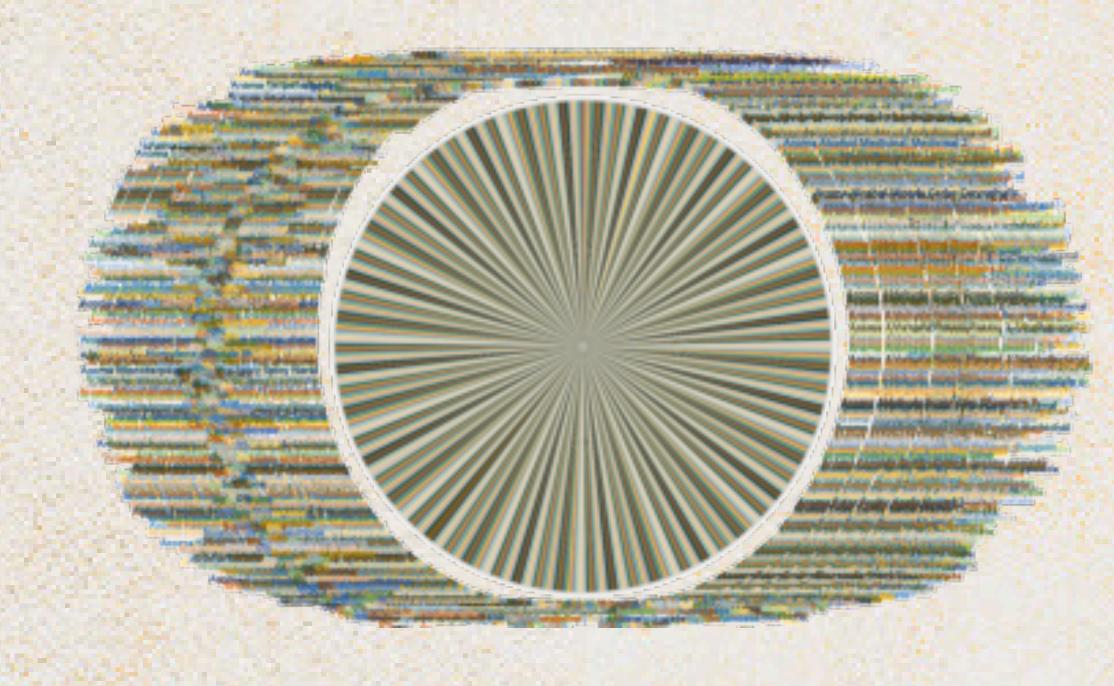




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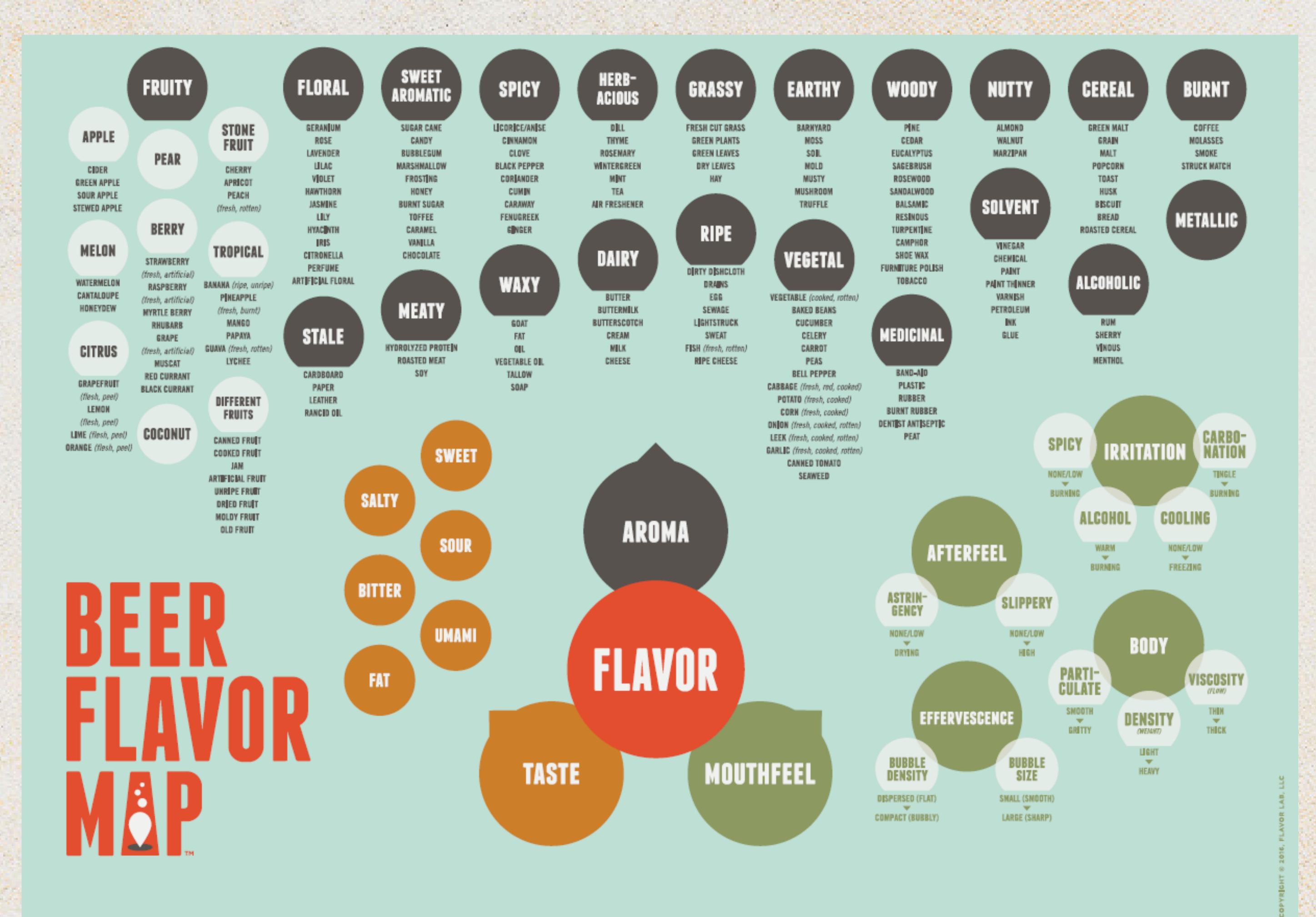
- 3. Vetting the database by cross-referencing with various public flavor databases
- 4. Designing a comprehensive, scientifically sound, intuitive and visually appealing tool aimed at helping the user more-specifically describe beer flavor.





# Result: A Scientifically Accurate & Approachable Tool

The Beer Flavor Map encompasses sensory terms appropriately integrated into taste, aroma and mouthfeel. It serve as an intuitive memory aid to help the user identify and thoroughly describe a wide range of possible beer flavors. While preserving most of the original 122 terms from Meilgaard's initial publication, the Beer Flavor Map now contains a total of 226 unique descriptors, each tied to specific compounds found in beer, categorized by broad and specific aromas, tastes and mouthfeels.





# Industry Wish List: Refine, Expand & Digitize

Adhering to Meilgaard's original plea for our tools to evolve alongside industry advancements, the next steps are to keep the map updated, take it to the next level and digitize the information thus making it more actionable. Keep it updated: Feedback solicited from the 2016 World Beer Cup Judges is currently being processed. Take it to the next level: Work is currently being done to design a chemical companion training tool based on specific, trainable flavor attributes. Digitize: Done! DraughtLab is available now with a free "Describe Your Beer" tool.



