



# **1: Integrating Sensory into a Wine Quality Program**

## **2: Value of Solid Internship Program**

The Journey from Tribal Knowledge to Solid Science:  
Building a Quality Program  
ASBC Annual Conference

June 14, 2015

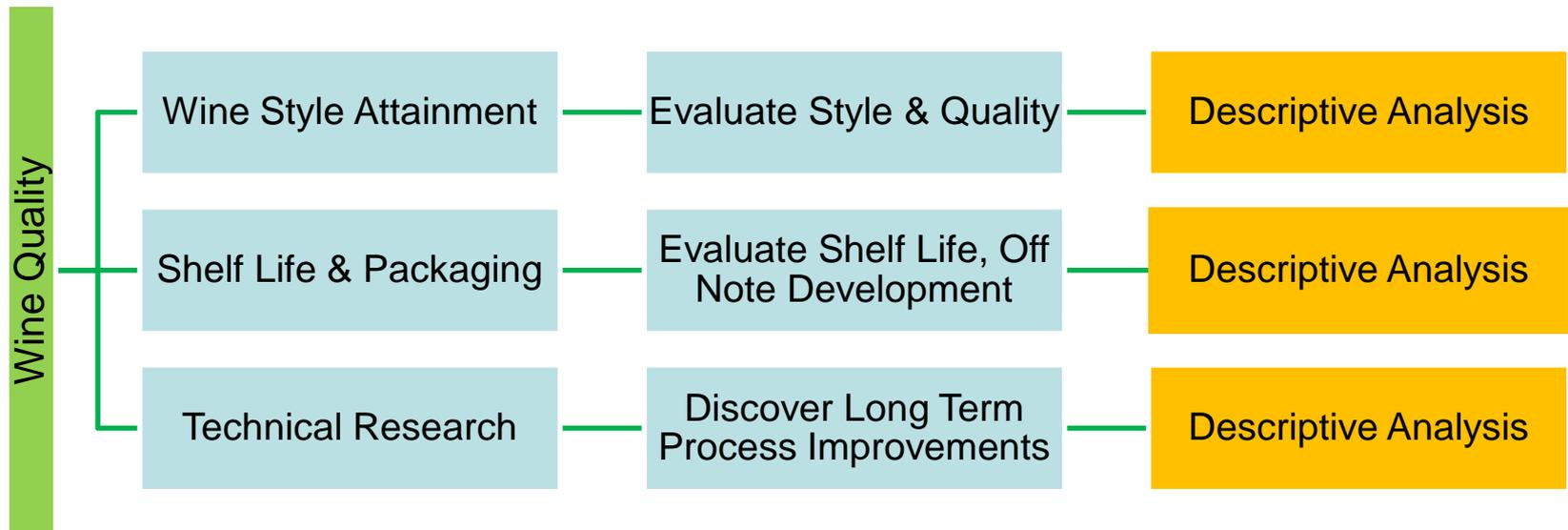
Christine Hansen, M.S.  
Sensory Analyst, E. & J. Gallo Winery



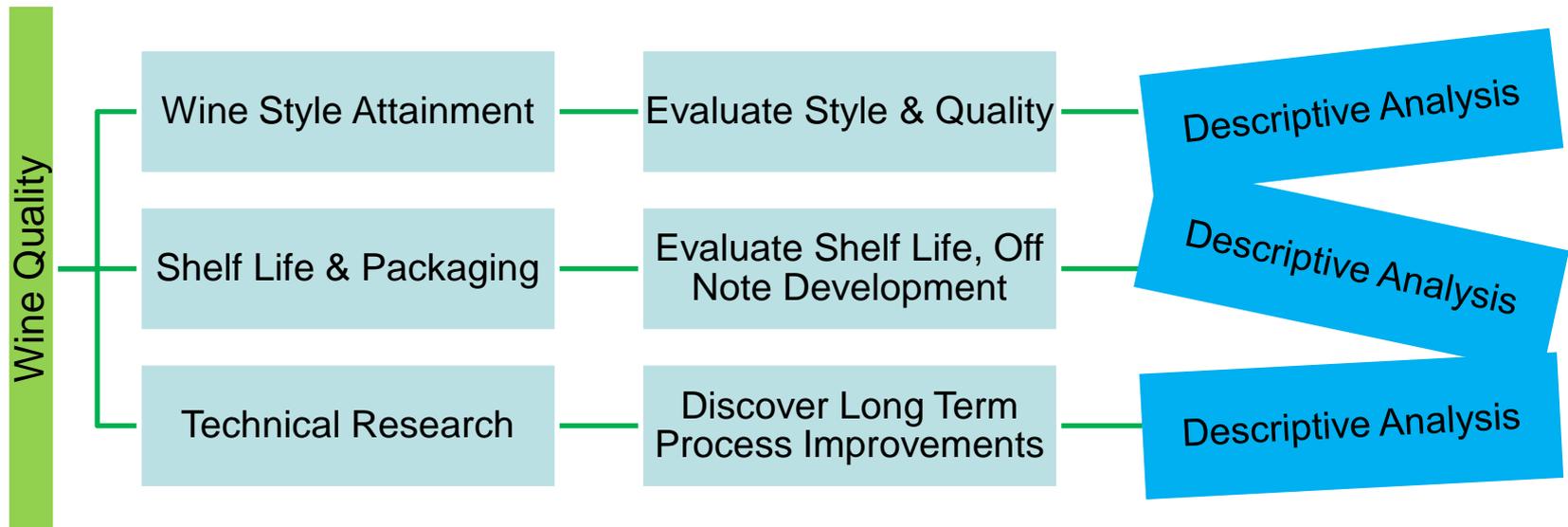
# Introduction

- College and Graduate School
  - Learned concepts of enology and viticulture
  - Increased knowledge in flavor chemistry and research
- Internships
  - Gained experience in both production and research
  - Provided context for further education
- E. & J. Gallo Winery – Sensory Analyst
  - Apply experience and knowledge to better understand how production processes affect wine sensory

# Sensory at Gallo is integrated into 3 quality platforms



# Sensory is integrated into 3 quality platforms



# Descriptive analysis panel is highly trained and monitored for performance

- 200 hours of training to qualify
- 3 hours of training per week
- Daily calibration
- Weekly performance analysis
- Performance reviews 3x/year



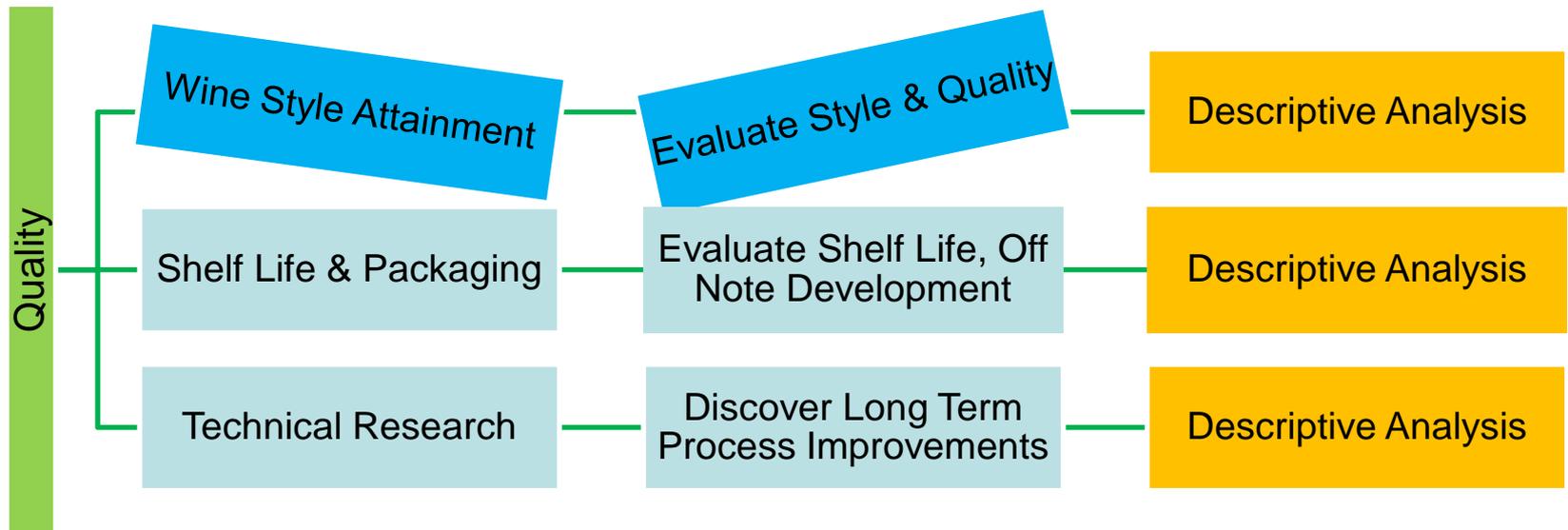
- **Gallo's descriptive analysis ballot is comprehensive**

- 40 distinct attributes evaluated for aroma and flavor

- Basic taste, mouthfeel, and aftertaste attributes

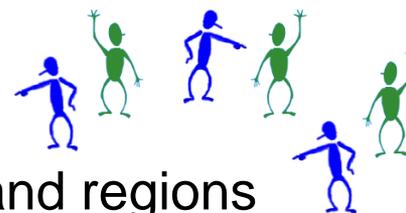
|   |       | Sample |        |  |  |
|---|-------|--------|--------|--|--|
|   |       | AROMA  | FLAVOR |  |  |
| <b><u>TOTAL AROMA/FLAVOR</u></b>          |       |        |        | <b><u>OVERALL SENSATION IN THE MOUTH</u></b> |  |
| <b><u>FRUIT</u></b>                       |       |        |        | Sweet  |  |
| Citrus                                    |       |        |        | Sour   |  |
| Tropical                                  |       |        |        | Bitter                                       |  |
| Tree/Stone                                |       |        |        | Nasal Pungency                               |  |
| Red Fruit                                 | Fresh |        |        | Burn   |  |
|   | Jammy |        |        | Astringency                                  |  |
| Dark Fruit                                | Fresh |        |        | Spritz                                       |  |
|   | Jammy |        |        | Mouth Roughness                              |  |
| Dried Fruit                               |       |        |        | Viscosity                                    |  |
| <b><u>FLORAL</u></b>                      |       |        |        | <b><u>Mouth Coating</u></b>                  |  |
| Rose                                      |       |        |        | Oily/greasy/waxy                             |  |
| White Flower                              |       |        |        | Chalky                                       |  |
| <b><u>GREEN/HERBACEOUS/VEGETATIVE</u></b> |       |        |        | <b><u>AFTERTASTE</u></b>                     |  |
| Fresh Green                               |       |        |        | <b><u>TOTAL AFTERTASTE</u></b>               |  |
| Cooked/Canned                             |       |        |        | Fruity                                       |  |
| Eucalyptus/Mint                           |       |        |        | Floral                                       |  |
| Herbaceous/Dried                          |       |        |        | Green/Herbaceous/Vegetative                  |  |
| <b><u>SPICE</u></b>                       |       |        |        | Spice  |  |
| Brown                                     |       |        |        | Oaky/Woody/Nutty                             |  |
| Black                                     |       |        |        | Sweet Aromatics                              |  |
| <b><u>OAKY/WOODY/NUTTY</u></b>            |       |        |        | Microbiological/Animal                       |  |
| Resinous                                  |       |        |        | Chemical                                     |  |
| Wood Shavings                             |       |        |        | Earthy                                       |  |
| Toasted Oak/Nutty                         |       |        |        | Inorganic                                    |  |
| Dark Roast                                |       |        |        | <b>Total Aftertaste after 1 minute</b>       |  |
| <b><u>SWEET AROMATICS</u></b>             |       |        |        |  |  |
| Caramelized/Vanilla/Browned               |       |        |        |  |  |
| Butter/Cream                              |       |        |        |  |  |
| <b><u>MICROBIOLOGICAL /ANIMAL</u></b>     |       |        |        |  |  |
| Animal/Cat pee                            |       |        |        |  |  |
| Sweaty/Yeasty/Lactic                      |       |        |        |  |  |
| <b><u>CHEMICAL</u></b>                    |       |        |        |  |  |
| Bruised Fruit/Alcohol/VA                  |       |        |        |  |  |
| Sulfide                                   |       |        |        |  |  |
| Petroleum                                 |       |        |        |  |  |
| Band-Aid                                  |       |        |        |  |  |
| Paper/Cardboard                           |       |        |        |  |  |
| <b><u>EARTHY</u></b>                      |       |        |        |  |  |
| Earthy                                    |       |        |        |  |  |
| Moldy                                     |       |        |        |  |  |
| <b><u>INORGANIC</u></b>                   |       |        |        |  |  |

# Sensory is integrated into 3 quality platforms



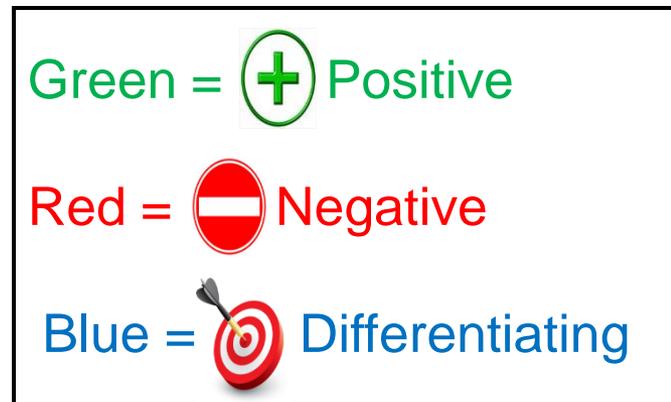
# Continually conduct research to understand trends in consumer preference.

- **Every few years, we update our learnings on attributes that are important to consumers**
  - By Varietal
  - By Group: Red, White, Blush, Sparkling...
- **Consumers = typical category users**
  - Consume wine regularly
  - Balanced across key demographics and regions
  - Cross section of price point consumption
- **Research includes consumer studies and descriptive analysis**



# Each wine has a wine style target: based on consumer and winemaker input

- **Attributes important to the group are included in the target**
  - Aroma/Flavor:
    - Intense and complex fruit profile: **Attribute A** and **Attribute B**
    - The fruit is highly supported by **Attributes C**
  - Basic Tastes/Mouthfeel:
    - **Attribute D** is higher than the **Attribute E**
  - Aroma/Flavor:
    - **Attribute F, Attribute G, Attribute H**



# Wine is evaluated at market release each vintage by descriptive panel

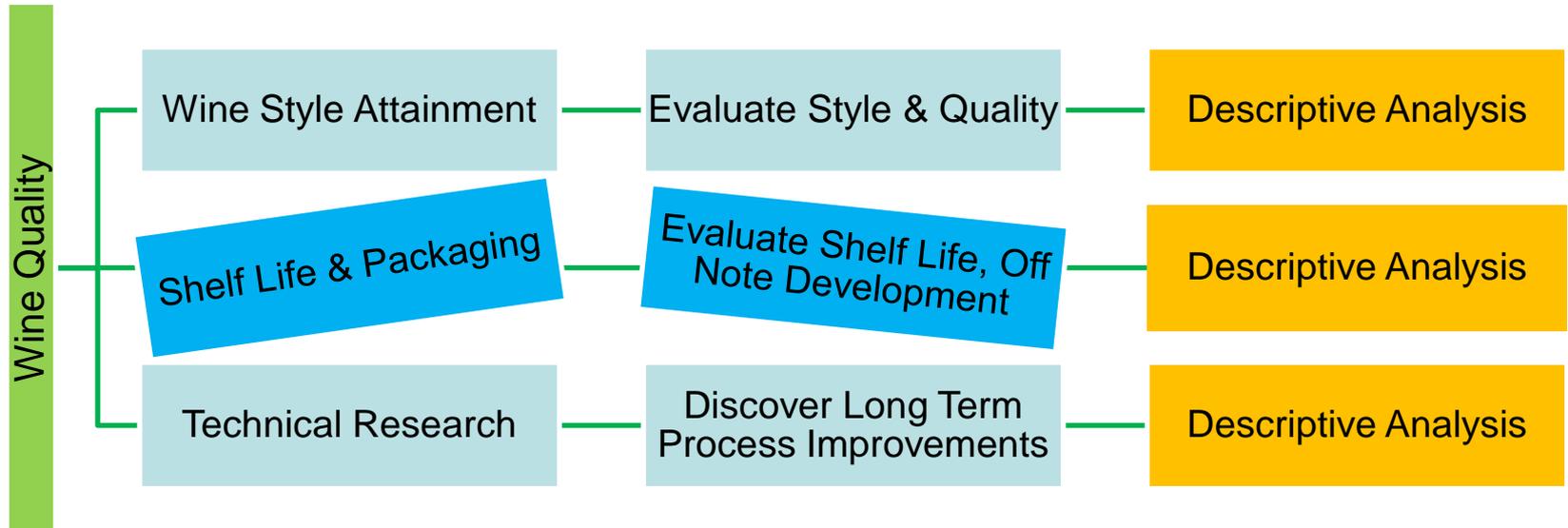
| Score | Description                         | Action   |
|-------|-------------------------------------|--|
| 1     | Fully On Target                     | Maintain Style                                       |
| 2     | Mostly On Target                    | Maintain style w/ slight adjustments                 |
| 3     | Off Target-<br>but no defects       | Adjust style if possible                             |
| 4     | Category Negatives,<br>Minor Defect | Assess wine to determine what<br>action is necessary |
| 5     | Category Negatives,<br>Major Defect |  |

Style {

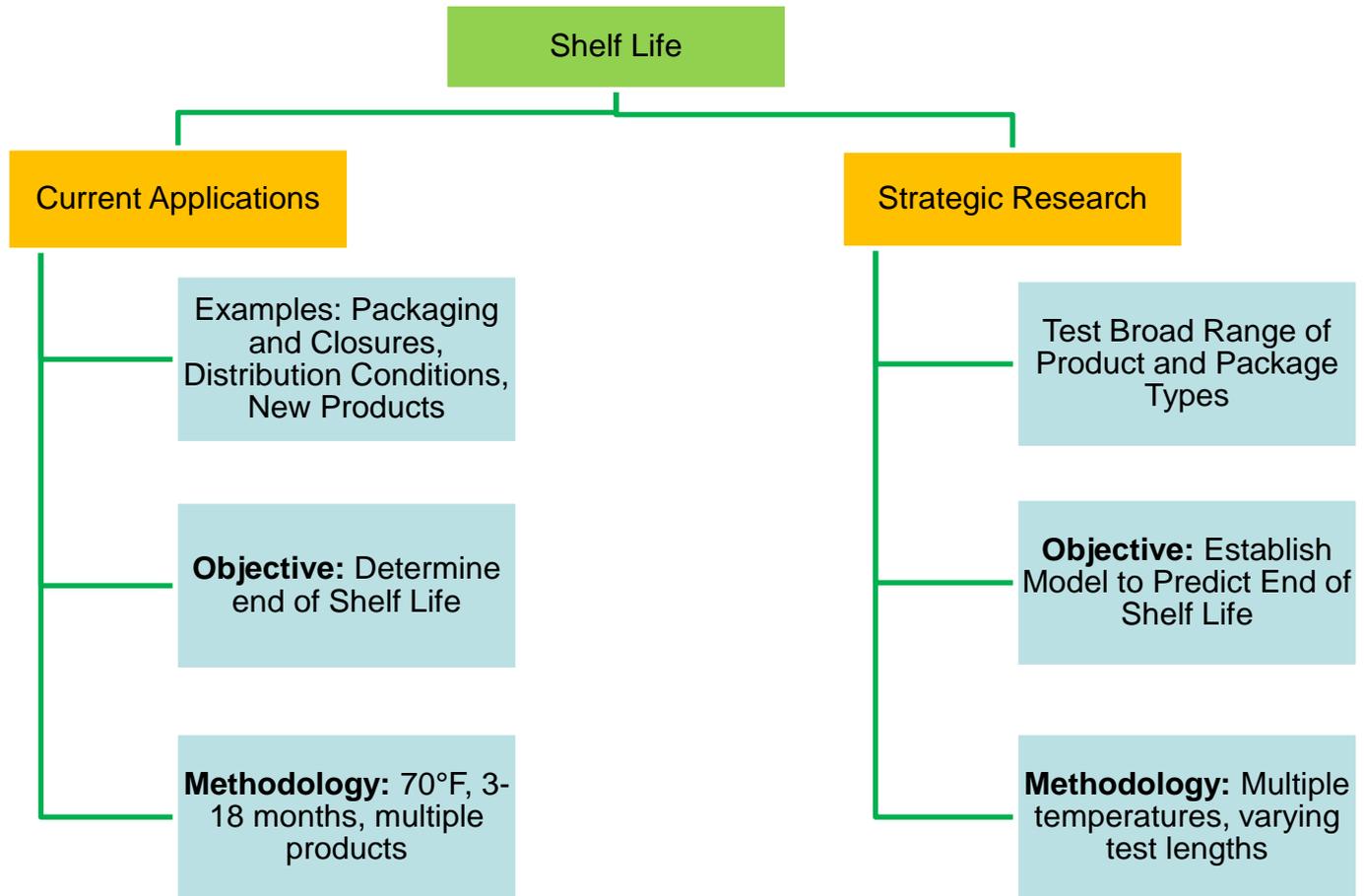
Quality {

Descriptive data is used to determine if wine meets its target and/or if it has any quality defects.

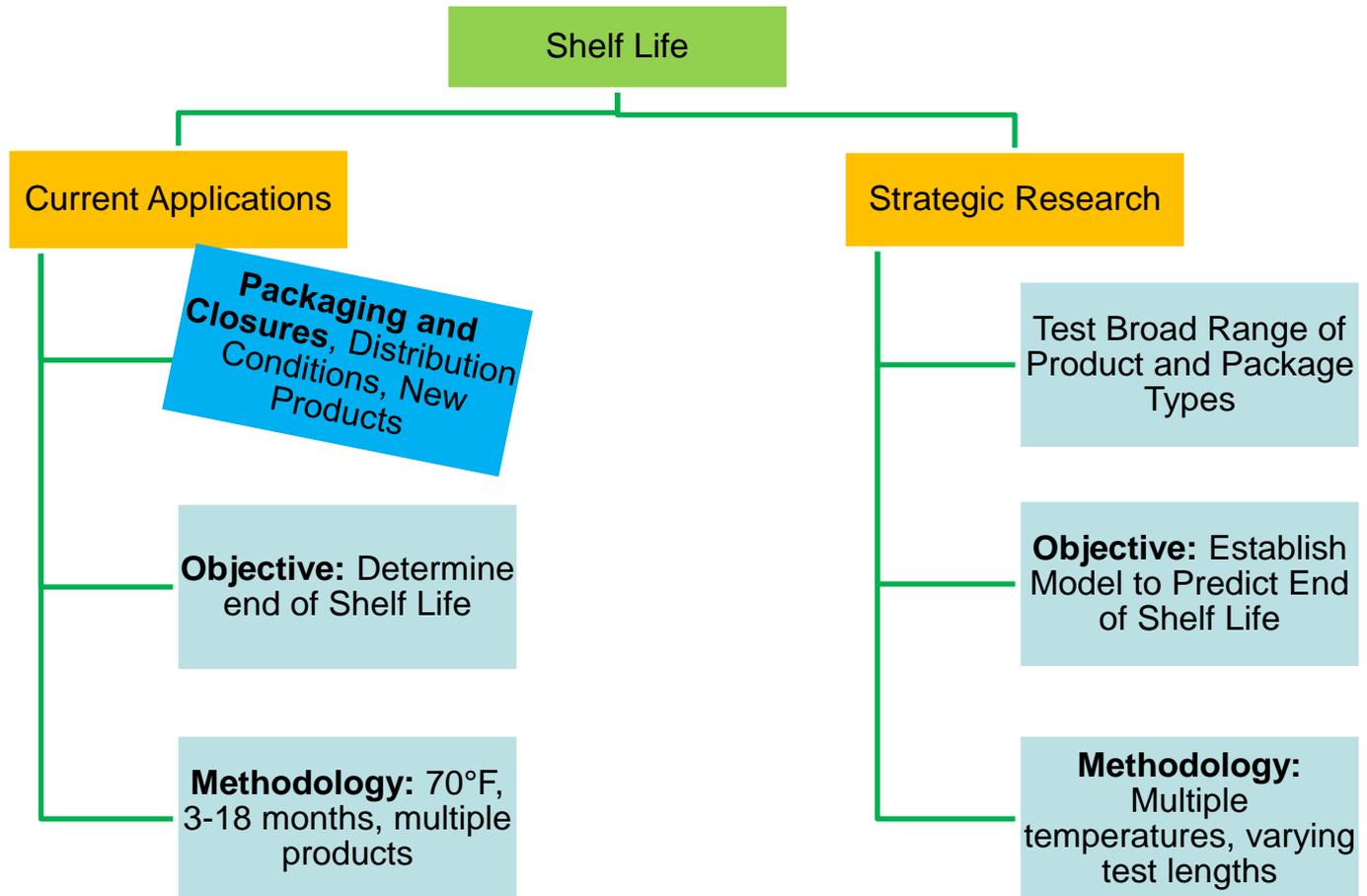
# Sensory is integrated into 3 quality platforms



# Shelf life platform is broken into two programs



# Shelf life platform is broken into two programs

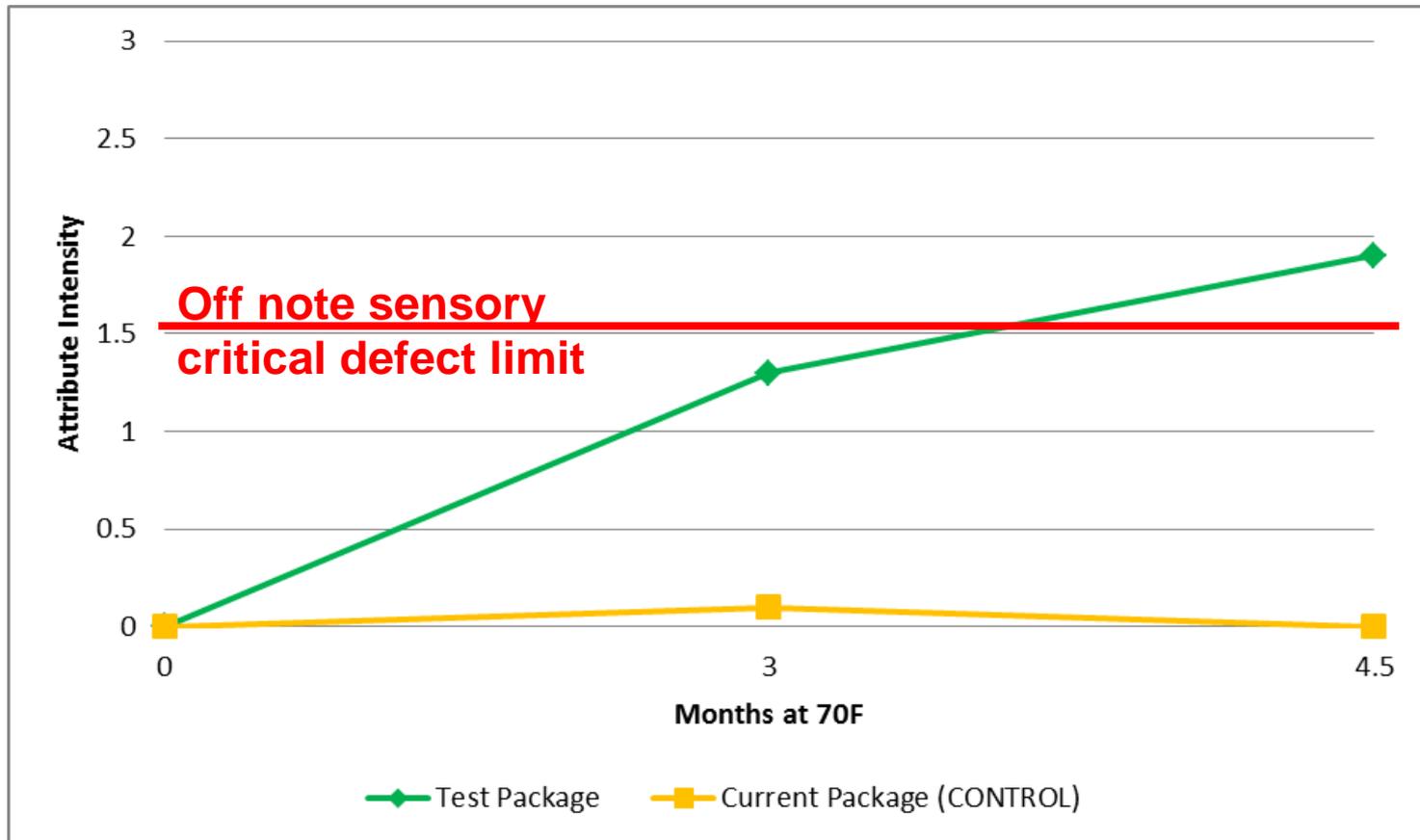


# New package and closure testing is a resource intensive process

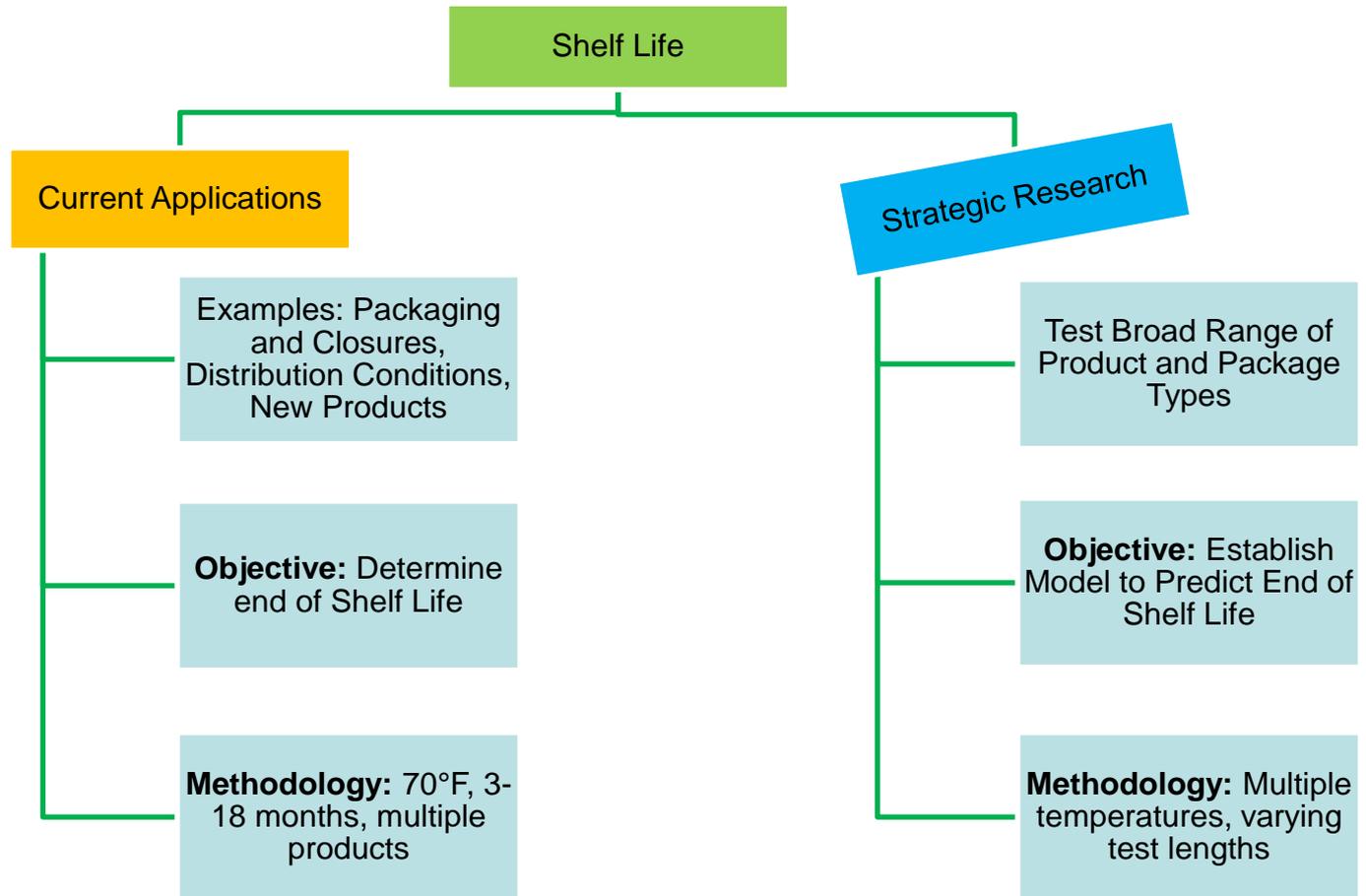
- Every packaging change and new design must go through sensory qualification against current package
- Test multiple wine types at 70°F
- Length of test depends on wine type and shelf life risk of package, ranges between 3 – 18 months



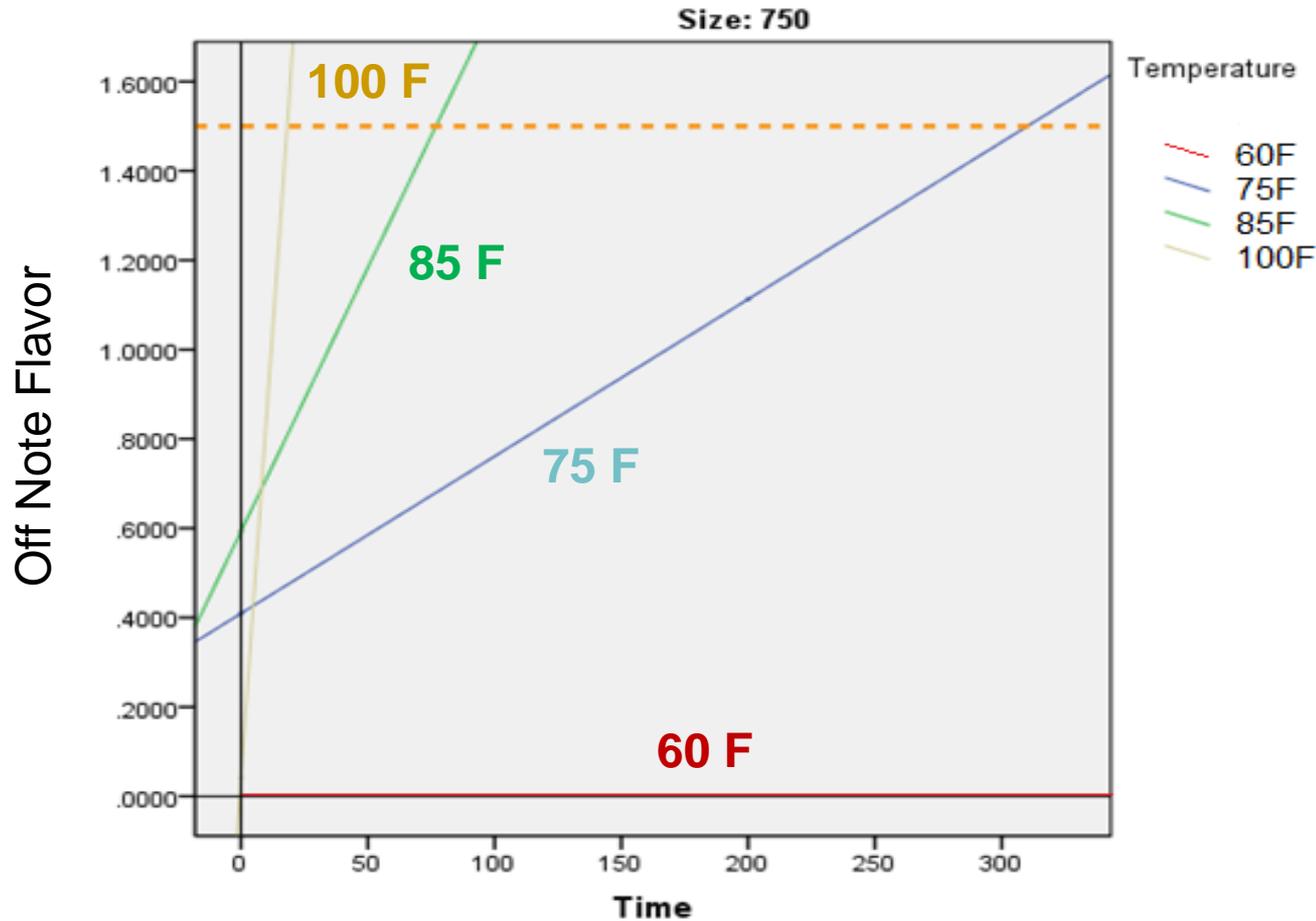
# End of shelf life determined by off note above critical defect limit



# Shelf life platform is broken into two programs



# Big range in shelf life degradation rates at different temperatures



# Strategic Research Program will save resources in the future!

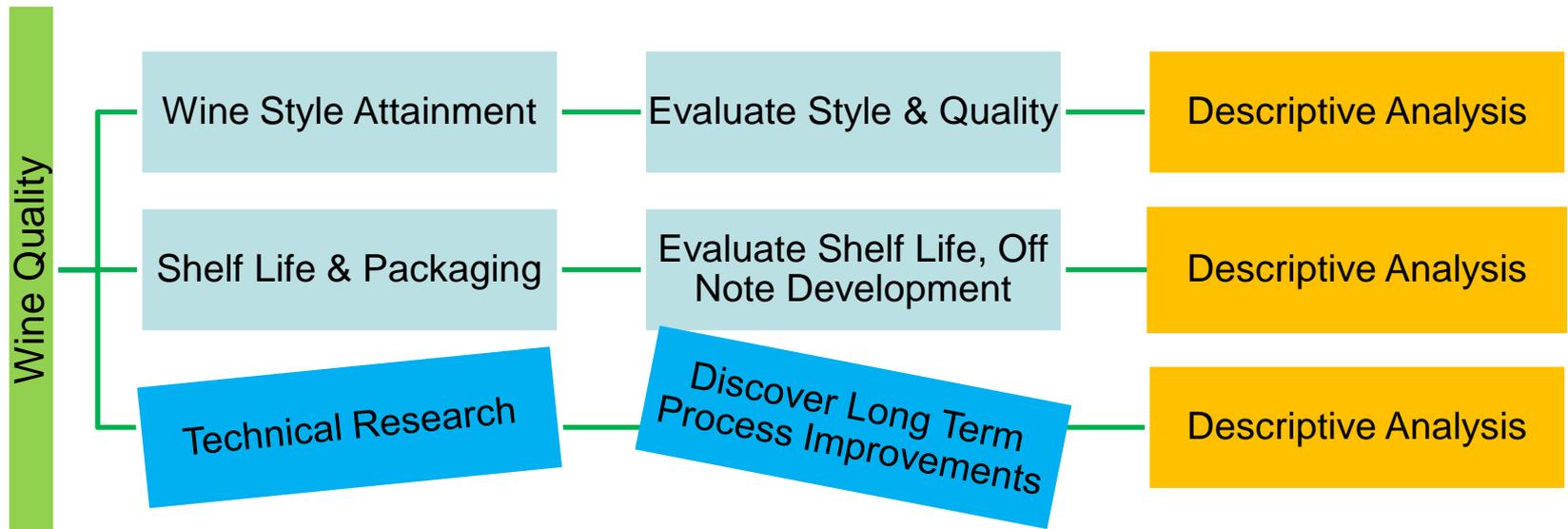
Today:  
Ambient  
Conditions

- 70°F
- Multiple Products
- **6-18 Months**

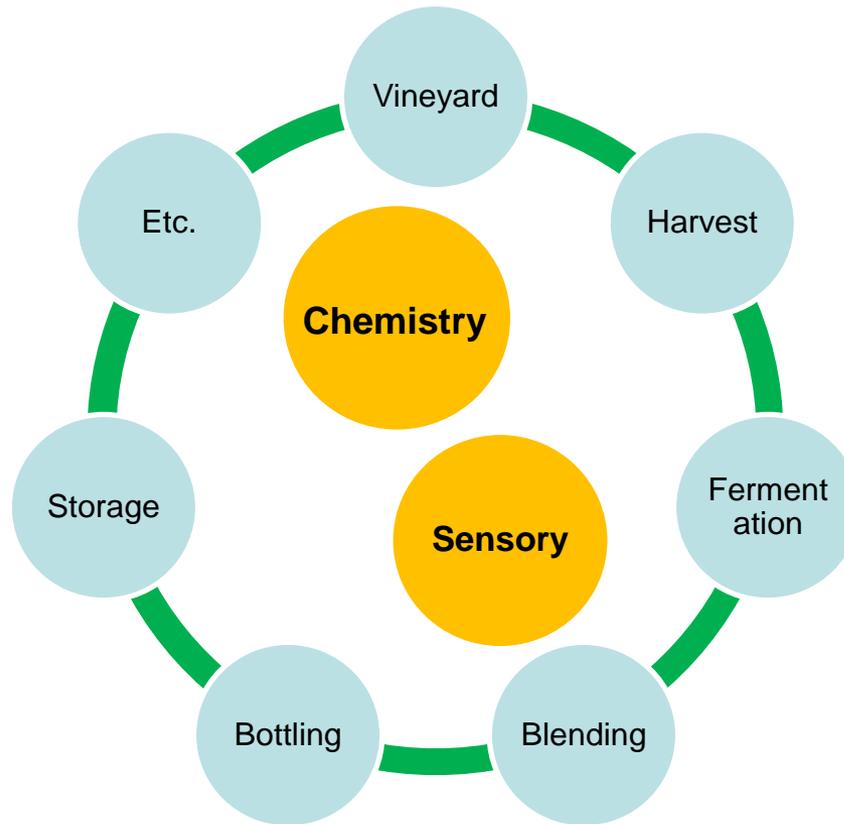
Future:  
Accelerated  
Testing

- 100°F
- Fewer Products
- **3 Months**

# Sensory is integrated into 3 quality platforms



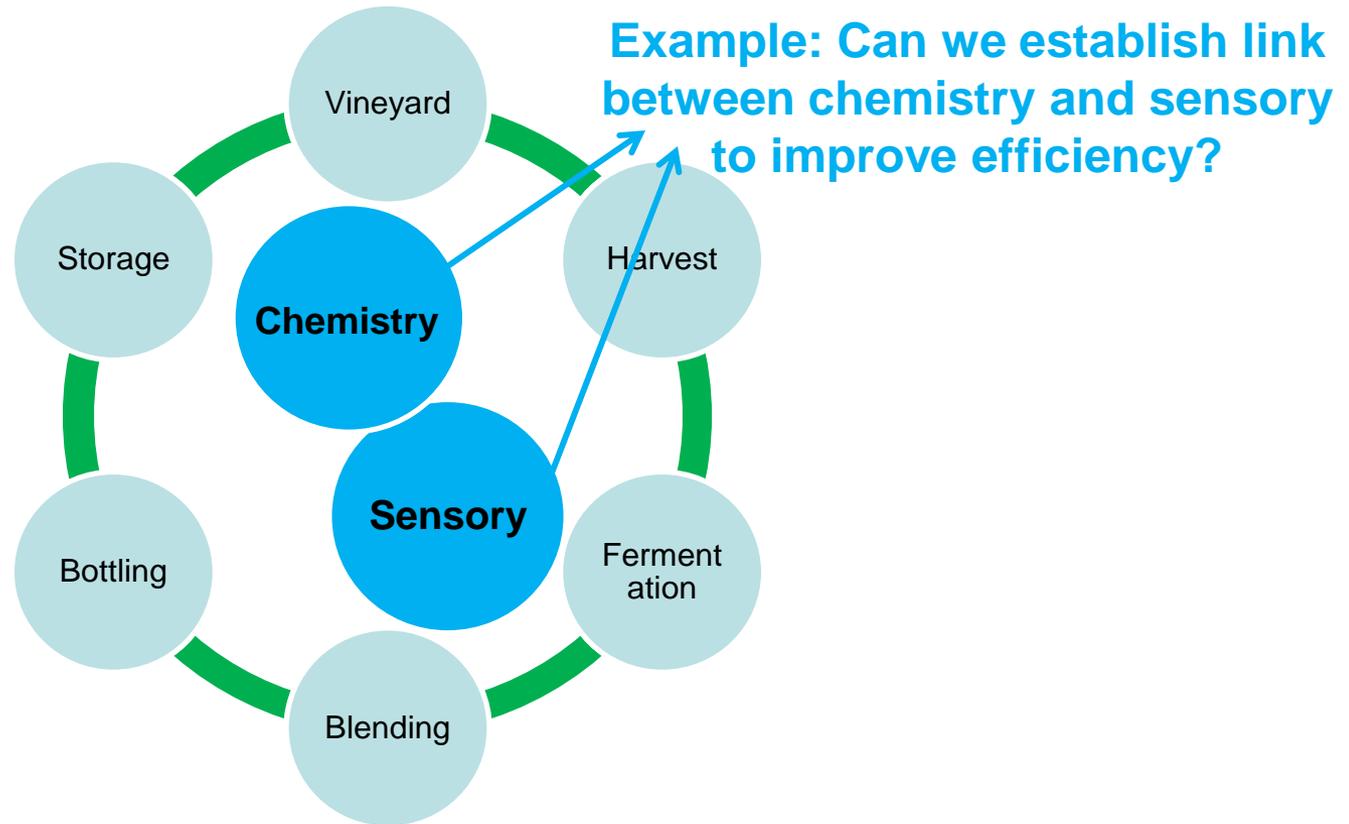
# Sensory and chemistry are used to understand how process changes affect wine sensory



**Our goal is to improve efficiency and decrease resource use without sacrificing consistency and quality.**

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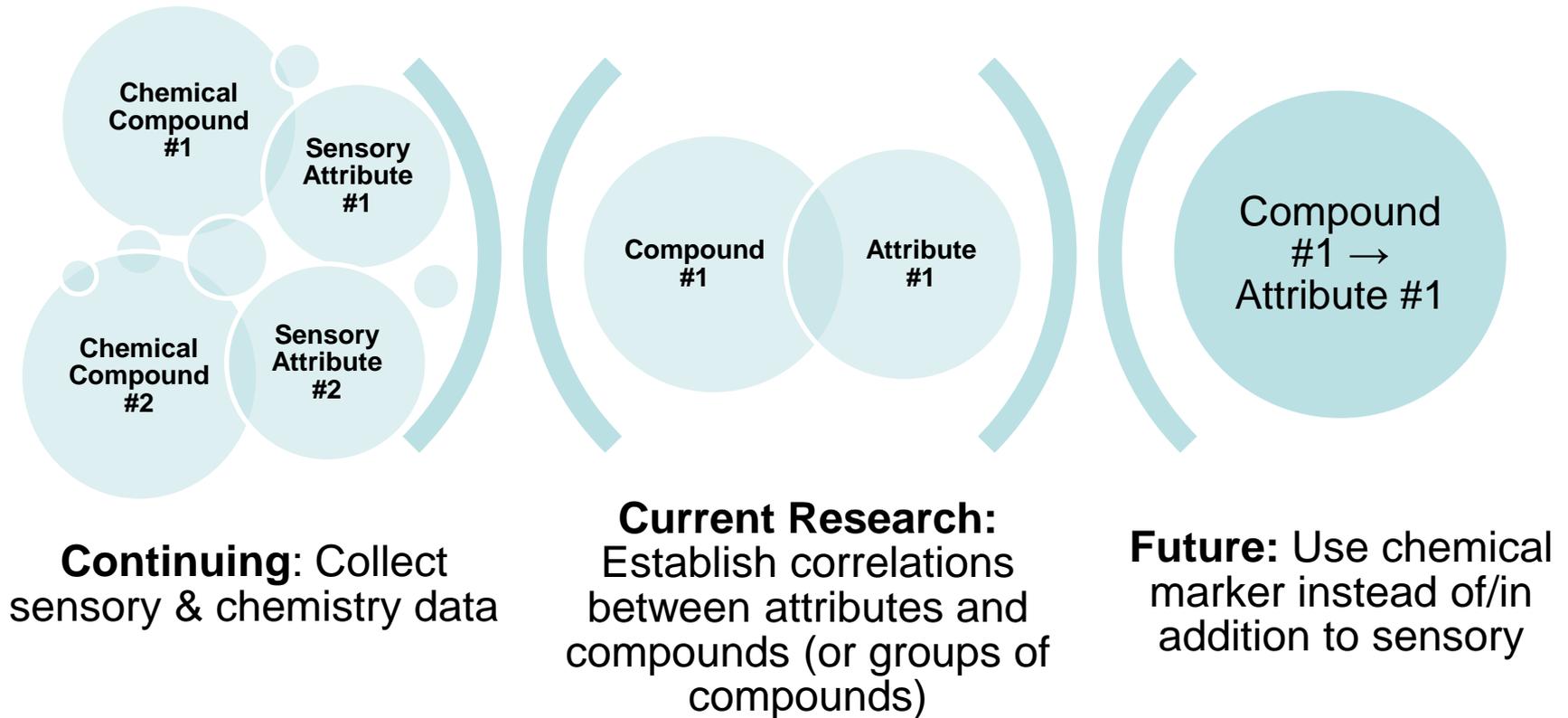
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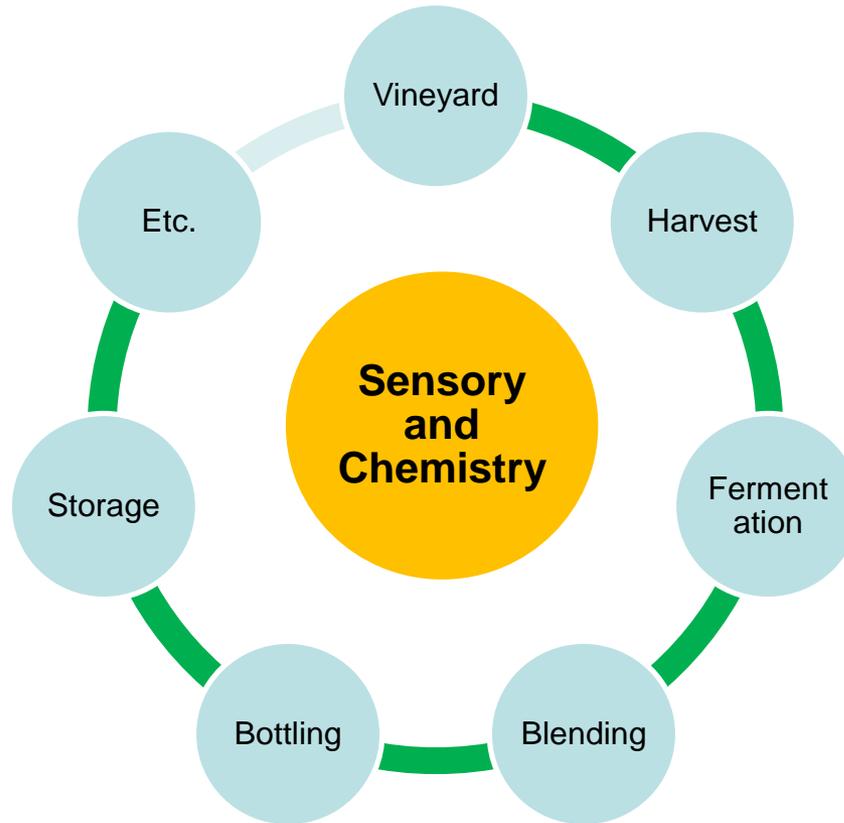
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# Current descriptive data can be used to link sensory and chemistry for the future



# Sensory and chemistry are used to understand how process changes affect wine sensory



**Our goal is to improve efficiency and decrease resource use without sacrificing consistency and quality.**

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# Academia & Industry



| Academia                                    | Industry                          |
|---|-----------------------------------|
| Foundational Research to Increase Knowledge | Consumer Focus                    |
|   | Research for Process Optimization |
| More Independent Work                       | Cross-Functional Teams            |
| Trial/Pilot Scale                           | Larger Scale                      |
| Multiple Review Processes                   | Faster Pace                       |

# Key to a good quality program is hiring quality people – with experience and education.

- Brewing and winemaking are applied sciences
- Need experience **AND** education
- Internships are key to making the jump from academia to industry
  - **Interns contribute knowledge from multiple disciplines, critical thinking skills, and can provide valuable insight and outside perspective.**
  - **Internships provide opportunity to apply concepts and give context to further education**

# Great internships provide value to both the intern and the company

- Maintain high expectations
- Provide context
- Allow for project management and communication skill development
- Ask questions (on both sides!)
- Seek variety of internships that provide routine production, research, and project ownership experience

# Thank you!

- Questions?

- Contact Information:



Christine Hansen

Sensory Analyst, E. & J. Gallo Winery

[christine.hansen@ejgallo.com](mailto:christine.hansen@ejgallo.com)