

## WRRC Highlights: 1940-2000

| Year                         | Innovation  | Outcome   | Links   |
|------------------------------|---|---|---|
| Late 1940s                   | Built a nuclear magnetic resonance instrument, years before commercial models, to determine the moisture content of foods.  | With modifications, it was used to identify compounds that are key flavor constituents of wines, peas, green coffee, certain cheeses, chili peppers, and other varieties of peppers.                      | <a href="#">Cited for More Than 60 Years of Flavor Research</a>                 |
| Late 1940s through mid-1960s | Investigated the steps required for taking foods from field to freezer to fork in a series of “Time-Temperature Tolerance” studies.   | The effort proved instrumental in helping the fledgling frozen food industry develop the tastes, textures, and aromas now in hundreds of foods found today in supermarket freezers.                       | <a href="#">Frozen Food That's Freezer Friendly</a>                             |
| 1953                         | Designed and built one of the world's first practical gas chromatographs (GC) to identify volatile flavor compounds, making GC essential for studying flavors.  | Gas chromatography quickly became an essential tool for food scientists studying the chemistry of flavor and aroma.   | <a href="#">Cited for More Than 60 Years of Flavor Research</a>                 |
| 1960                         | Developed a method that allows wool fabrics to be machine-washed and tumble-dried without shrinking. Later developed processes for making wool blankets flame resistant, and wool fabric stain resistant and receptive to certain dyes. | The processes were quickly adopted by large textile firms in the United States and Europe and proved instrumental in improving the quality of wool clothing, blankets, carpets and other woolen products. | <a href="#">Protecting U.S. Troops With Fireproof Wool</a>                      |
| 1961                         | First to analyze aroma compounds by injecting the vapor collected above a food into a gas chromatograph.  | The method became a food industry standard and is widely used by scientists in other fields.  | <a href="#">Cited for More Than 60 Years of Flavor Research</a>                 |
| 1960s                        | Discovered that chilling chickens and turkeys at low temperatures before freezing them improves tenderness.   | Meat processors applied the findings and over the next 5 years, turkey and chicken consumption increased by 2.5 billion pounds.   | <a href="#">It Takes a Tough Scientist To Make a Tender (and Juicy) Chicken</a> |
| 1960s                        | Developed methods to peel fruits and vegetables that reduced water use and food waste.  | Reduced waste sent to landfills, saved food processors major disposal costs and helped them meet state and federal water pollution standards.   | <a href="#">Tomato Cannery Tackles Tough Water-Reuse Issues</a>                 |
| Late 1960s                   | Found a bacterium and a strain of yeast in San Francisco sourdough bread that are key to its distinctive flavor.  | Allowed San Francisco sourdough bread to be baked nationwide.   | <a href="#">Science in Your Shopping Cart</a>                                   |
| Late 1960s and 1970s         | Developed high-protein blends of wheat and rice in response to an international call to address malnutrition in developing nations.   | The process was quickly adopted and used in certain breads to fight malnutrition both in the United States and overseas.  | <a href="#">Exposing Wheat's Genetic Secrets</a>                                |
| Early 1970s                  | Discovered that almonds contaminated with aflatoxin fluoresce under ultraviolet light and developed a fluorescent-based sampling method that improved processing.   | Reduced costs for almond producers and made almonds safer to eat.   | <a href="#">Infrared Heating: Hot Idea for Keeping Almonds Safe To Eat</a>      |