VITA

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CAREER SUMMARY

Over 40 years experience in consumer and military foods research and production where demonstrated ability to apply technology in solving real world problems, thereby significantly adding to my employer's bottom line. Key areas of expertise are: product development; batters and breaders for food coatings; supervision of analytical equipment and laboratory; microwave scientist and engineer; Starch and hydrocolloid scientist, cost effectiveness; use of enzymes to process foods and flavors; food processing machine development; meat technology; RTE canned soups and meals; entrees (frozen, refrigerated, retort, and microwave); irradiation; meat coatings; chocolate; pectin; dry emulsions; coconut; and frozen novelties.

WORK EXPERIENCE

NEWLY WEDS FOODS [$1.2 Billion revenue] July 2000 to Dec, 2013

Manager, Basic Research

- Supervised department of 4 scientists serving as support to customer dedicated scientists and NWF unique product development and sustaining existing businesses.
- Maintained R&D analytical testing procedures and provided instruction to other scientists.
- Maintained bakery science laboratory and developed specifications and procedures for wheat and corn flour.
- Organized and conducted both onsite and offsite education of Newly Weds Foods scientists in the science of milling wheat flour, milling corn flour, processing cornstarch, wheat gluten, and extrusion.

Key activities

⁀ Japanese style bread crumb [panko] – NWF is largest manufacturer of JBC with over 10 facilities producing about 1,000,000 lb of dough daily. Over the past 13 years I was the primary scientist for the formula and processing.
   a. Commercialized the cart line decommissioned from UK and set up in Beijing.
   b. Documented the entire NWF JBC processing for all the varied equipment.
   c. Provided guidance to all locations on flour selected and best practice.
   d. Leading team member for JBC optimization.
   e. Used existing equipment to duplicate all forms of JBC world wide
   f. Developed the science of dielectric baking and introduced the scientific process to development.
   g. Commercialized the duplicate competitor extruded microwave baked JBC.
   h. Commercialized frozen JBC.

⁀ Identified the key ingredients for NWF successful duplication of a QSR chicken nugget

formula resulting in NWF becoming a vendor. This key business is annualized at $5 million leading to additional commercial sales. This was followed with testing protocol to identify non-caking of QSR topping spices.

- English muffins – NWF has been in the English muffin business since 1954.
  a. Only R&D member of the management-led optimization team. Production was successfully optimized and documented.
  b. Developed new E/M for QSR, Child nutrition, export, etc. these represent 20,000 dozen per day valued at $12 million.
  c. Optimized proofing & baking profile
  d. Studied the texture of E/M under varying storage conditions and as served.
  e. Developed and validated only inoculated mold ambient shelf life study.

- Optimized extruded JBC manufacture using Wenger single screw extruder through starch evaluation and glass transition.

- Successfully completed 3-year initiative to manufacture Crouton products using American bread crumb equipment on hand. Project included bread formulation, development of proofing and baking profile, staling & drying protocol, and rancidity prevention resulting from moisture, drying conditions, and high copper content in the municipal water

- Fat reduced French fries with clear coat.
  a. Led [summer intern] development of a 45% reduced fat French fry between standard product and modified.
  b. Conducted extensive research resulting in strong background on potato processing and frying.
  c. Optimized ionic characteristics, starch action and interaction and film forming as mechanisms for achieving fat reduction.
  d. Presented to key vendor seminars on glass transition of foods, cationic batters, ionic interactions between potatoes and batters, fiber effect on fat reduction, conductivity and zeta potential.

- Yeast – Use of proper yeast to achieve optimized product and best cost for all the bakeries.

- Shelf life studies

- Powder flow and anticaking technology. Resolved customer and NWF technical challenges.

- Rusk manufacture – Successfully commercialized using minimally converted USA cracker meal line to manufacture UK style rusk in the USA. This was the based upon:
  a. Understanding the UK process not only by equipment but by understanding the thermal and chemical transformations that occur during the process.
  b. Scientifically and analytically approaching the duplication.
  c. Identified the existing cracker meal line parameters and altered the process to match that of the rusk. Validated by analytical and performance testing.
  d. Annual value $250,000 sales

- Wheat and corn flour resident expert [Globally].
  a. Wrote and maintained USA specifications.
  b. Worked closely with all millers
  c. In-house flour technical resource

d. Identifying characteristics of non-NWF flour to find a match for duplication or to satisfy customer needs.
e. Globally worked with millers and NWF facilities on as needed basis. One area was to find equal flour for identical recipe.
f. NWF corporate liaison and member of American Association Cereal Chemists International
g. Presented seminar to USDA soft wheat geneticists on the wheat flour that best serves the food coatings industry.

⁀ Technical service of coated poultry
Regarding the matching of flour I had to use both my animal science and flour science back-ground to resolve customer flour based product performance issues. Many of these required plant visits as the customer to sales communication. These are multi-faceted and required excellent deduction skills to resolve the issue. All were successfully accomplished.

⁀ NWF in-house analytical laboratory
a. Basic research was central repository for all analytical equipment [prior they were decentralized and not maintained].
b. Maintained the equipment, acquired all owners' manuals and wrote SOP for their operation.
c. Hired and trained an analytical chemist to conduct requested tests for NWF scientist. Tests are pertinent to the scientist work and free them to concentrate on customer contact. Range of tests include moisture, pH, RVA, chittick, texture, fat, salt, acidity, viscosity, mixogram, wheat gluten, SRC, yeast-gassing power, loaf volume, etc.
d. These number 400 tests per month. Valued at $100,000 annually if purchased outside

⁀ Frozen coated meats in microwave susceptor packaging
a. Trained sales force on calibrating microwave oven to insure optimum heating using various types of microwave equipment.
b. Guided susceptor fabricator on proper manufacture of packaging for use in frozen storage and appropriately tuning for heating the frozen raw meat.
c. E.g., par fried coated chicken pieces lost crispness during freezing and would not microwave heat to same crispness as observed initially. Guided NWF management and packaging resources on the principals and practices of frozen food distribution and development.

⁀ Served as co-lead with Dr. Sandra Hill mentoring a PhD candidate at Nottingham University studying JBC which resulted in student successfully completing study and receiving PhD award.
a. Lead the design of the NWF-focused scientific investigation.
b. Attended regular onsite progress meetings to keep student on track.
c. Presented classes at Nottingham University while visiting.
d. Student successfully completed study and awarded PhD.

⁀ Supervised volunteer student interns from Illinois Institute of Technology for 10 years
a. Over 100 students undergraduate students were interned contributing 2400 days [or 9 years] of work that benefitted NWF valued at $360,000.
b. Six graduate students [MS and PHD] worked on independent projects that were commercially important to NWF: muffin texture, potatoes, pilot plant data analysis, process engineering, and bakery. These students contributed 1.5 years of work that benefitted NWF which equated to $150,000 of benefit.

- Several fat reduction projects across career on chicken nuggets and with unique coatings.

- University [multiple] student interns
  a. My department of three scientists supervised 8 USA university students. This is represents half the student interns selected each year.
  b. All projects were of commercial value to NWF. One project went into production and another provided valued intellectual property.
  c. Two were hired as employees

ED MINIAT, INC, [$50 MILLION REVENUE] 1999 to July, 2000

R&D Manager

Directed and conducted research on
- Business development of cooked ground and formed meat patties for ConAgra brands Marie Calandar and Healthy Choice frozen dinners.
- Business development of cooked ground and formed meat patties for Armour Swift Eckridge.
- Business development of cooked ground and formed meat patties for Miniat-OSI to sell to the general customer base.

CONAGRA FROZEN FOODS COMPANY [$25 billion revenue], 1988 to 1999

Research Scientist 1991 to 1999

Directed and conducted research on
- Business development for shelf stable ready meals (business sector was $500 million) - developed the equipment for food production, process and formulation that lead to a unique polymeric ready meal (required expertise in microwave, radio frequency, and pressure).
- Led development and commercialization of the first commercial microwave sterilizer approved by USDA.
- HMR product development (required to be HACCP certified, knowledgeable in food safety, conducted food safety testing).
- Cost effectiveness initiatives [1995 to 1998], which resulted in $1.5 millions savings per anum on items as in-house flavor, broth, imported beef, tomatoes, cheese, chicken fat, self made margarine, dairy blends, etc.
- Reduced Bill of Materials by 700 items of minor items to improve cost management of ingredients resulting in a $200,000 savings of computer processing time.
- Pioneered the use of liquefied gases for defatting of foods allowing for whole food pieces (nuggets and French toast sticks) to have lower fat and to process soybeans without hexane and preserve bean nutrients. ConAgra has installed such a system for nutrceuticals ($25 billion business)
- ConAgra's Member of International Microwave Power Institute
  Traveled extensively to Europe, Argentina, Uruguay, and Japan working with vendors and other resources to develop an understanding of their philosophies and manufacturing techniques.

Senior Research Scientist 1988 - 1991

Directed and conducted research on meat/poultry including:

- Banquet fried chicken, improved microwaveable coating. $20 million profit opportunity
- Successful Microwave Banquet pot pie with edible susceptor.
- Identified and approved co-packers of cooked chicken and beef for the successful ($500 million) Healthy Choice Dinners during year one.
- Worked with suppliers in Argentina to produce custom beef for Healthy Choice and satisfying USDA import requirements.

Directed and managed the development of the successful Healthy Choice line of shelf stable meals that evolved into the Healthy Choice line of soups. The project spanned six months from concept to commercial production for regional distribution.

Directed the research that led to developing the successful Healthy Choice egg substitute, representing 10% of the egg substitute market.

GENERAL FOODS CORPORATION [$10 billion revenue], 1975 TO 1988

Research Scientist, Cranbury NJ 1984 to 1988

Directed research on meat/poultry that was used in retorted, frozen, refrigerated, microwaved, and Italian entrees; collaborated with chefs to develop meat/poultry items; identified, evaluated, and qualified vendors; established ingredient and process specifications; established quality control attributes; conducted plant start ups; guided purchasing; coordinated USDA conformance. As a result, the following product lines were successfully introduced in regional markets:

- Impromptu [retort entrees] $300 million sales
- Fresh Creations [frozen dinners] $400 million sales
- Ronzoni [frozen entrees] $200 million sales
- Zappetitites [microwave snacks] $100 million sales
- Culinova [refrigerated dinners] $30 million sales

Project Leader/Group Leader, Cranbury, NJ 1980 - 1984

Directed and managed research teams providing significant contribution via line extensions, product improvements, and production savings:

- Line extension - Pudding pops [successfully initiated Swirl Pudding Pops]
- Product improvement
    1. Dream Whip - guided prototype development through National introduction in ten months, including marketing demonstrations, consumer testing, and plant start-up. Patent issued for improved stability utilizing gum technology.
- Production savings

1. Bakers coconut - developed and implemented revised formulation which resulted in improved profit margin and production efficiencies.
2. Pectin - executed Sure-Jel relocation to Puerto Rico allowing a $2 million cost avoidance to corporation. Identified a gelometer for jelly texture test. Publication in Journal of Texture Studies.
3. Gelatin pops - studied rheology of gelatin pops for reduced shipping damage.
4. Led task force, which successfully manufactured enzyme-treated acid soluble collagen for use as an ingredient to retard ice crystal growth.

Food Technologist/Project Leader, Dover, DE 1975-1980

Supervised a team that generated data for advertising claims and developed new products and line extensions.

1. Designed and implemented research on Shake N Bake ($20 million profit business) resulting in proven claims for better quality.
2. Led production start-up of oven Fry within 6 months time frame resulting in $5 million business.
3. Managed on-going research group responsible for both Oven Fry and Shank n Bake line extensions, product improvement, and cost savings.

UNITED STATES ARMY, 1969 - 1997

Active Duty 1971-1972

Quartermaster Officer in charge of all baked goods production for 50,000 active duty and dependents at Ft. Bragg, NC.

Reserve Duty 1973- 1997 (Retired)

Lieutenant Colonel coordinating research and development at US Army Natick R&D Center, Natick, MA on various programs including irradiated meats, thermostabilized meals, compressed foods, high pressure sterilization, microwave sterilization, radio frequency processing, and evaluating university contract projects.

During Desert Storm, 1993, responsible for identifying, purchasing and directing delivery of food and water products for the troops.

ACADEMIC INSTRUCTION

Instructor at Rutgers University (1974-1977) for annual one week intensive Meat Science course covering such topics as muscle physiology and emulsion science.

Adjunct Professor of Food Science at the University of Delaware (1978-1980) pioneered the cooperative program between the University of Delaware and General Foods.

Mentor to Elmhurst College, Elmhurst, IL from 2001 to present.

EDUCATION

Ph.D. - Animal Science, University of Florida, 1975
M.S. - Food Science, University of Florida, 1971
B.S. - Food Science, Rutgers University, 1969

PUBLICATIONS

17 Scientific publication [subjects: egg quality, egg microbiology, seafood rancidity, jelly texture, QC procedure on beet powder, USDA presentation on flour for food coatings]. Numerous industrial scientific presentations.

2 US patents on meat coating.