

## Philip Edwin Nelson

### I. GENERAL INFORMATION:

#### A. Academic Record:

<u>Degrees Received</u>	<u>Institution</u>	<u>Dates</u>
B.S.	Purdue University	1956
Ph.D.	Purdue University	1967

#### B. Dates and Rank of Appointments Held:

William Scholle **Endowed Chair** in Food Processing 2004-present  
 Professor, Department of Food Science, 2003-present  
**Head** and Professor, Department of Food Science, 1984-2003  
 Faculty Representative to Big 10 and NCAA, 1984-2003  
 Acting Head, Department of Food Science, 1983-84  
 Director, Food Sciences Institute, Purdue University, 1975-83  
 Professor of Food Science, Purdue University, 1975-  
 Associate Professor, Purdue University, 1970-74  
 Assistant Professor, Purdue University, 1967-70  
 Instructor in Horticulture, Purdue University, 1961-67  
 Plant Manager, Blue River Packing Company, 1956-60

#### C. Professional Activities:

Sigma Xi

Phi Tau Sigma (Food Science Honorary)

-Charter Member - Purdue Chapter

-National Membership Chairman (1976-77)

-National **President** (1977-78)

#### **Institute of Food Technologists (22,000 members)**

President Elect (2000-2001)

**President** (2001-2002)

Past President (2002-2003)

Executive Committee (membership elected) (1986-89)(2000-2003)

Search Committee, Executive Vice President ((2001-2002)

Councilor (1980-89) (2000-present)

Finance Committee (2005-2008)

Forums Committee, chair (2002-2005)

Mgt Committee on Science, Communications & Govt. Relations ( 2002-2005)

Chief Food Officials Committee (1997-present)

Long Range Planning Committee (1979-82)(1982-86) (1992-95), Chair (1995-2001)  
Division Chair, Fruit and Vegetable (1974), Co Chair Fermented Foods & Beverages (2004)  
Task Force on IFT/NRA Alliance (1998-1999)  
Nominations Committee (1982-85)(1996-1999)  
Awards Committee (1978-81) (1986-88) (2001-2005)  
Research Committee (1988-90)  
Scientific Lecturer (1982-86) (2005-)  
Member Expert Panel on Food Safety and Nutrition (1980-82)  
Constitution and By Laws Committee (1976-79)

North Central Food Science Administrators, Chairman (1980-81),(1983-84),  
(1989-90)  
National Food Science Departments, Chairman (1985-87)  
Chairman and Executive Committee, Indiana Section (1974-77)

#### **USDA**

National Agricultural Research, Extension, Education and Economic Advisory Board  
(2002-2005)  
Speciality Crops Committee (2005-2007 )

#### **National Academy of Science**

-Chairman, Subcommittee on the World Food and Nutrition Study (1974-77)  
-Member Workshop on Post Harvest Conservation, Delhi, India (1979)  
-Additives Used in Food Processing Committee (1979-81)  
-Food Additives Survey Data Committee (1980-1991)

#### **Others**

R&D Associates, Executive Committee (1983-85), Program Chairman (1987)  
Board of Trustees, The Food Processors Institute (1984-93), Chairman (1988-93)

#### **Memberships**

Institute of Food Technologists  
International Union of Food Science and Technology (UK)  
American Association for the Advancement of Science  
Sigma Xi  
Ceres  
Phi Eta Sigma  
Alpha Zeta

#### **D. Citations:**

American Men and Women of Science  
International Who's Who in Education  
Who's Who in the Midwest  
Who's Who in Technology Today  
Who's Who in Frontier Science and Technology  
Who's Who in Engineering and Science  
Who's Who in American Education

## E. Awards and Honors:

- Food Processing Putman Food Award (1975) - This award honors outstanding developments introduced in the food industry. A panel of 24 leading industrial representatives selected the bulk storage technology for top honors. Entries were rated on innovation, breadth of application in the food industry and significance to the food industry. This technology received an unanimous vote.
- Institute of Food Technologists Industrial Achievement Award (1976) - This award is presented by the Institute of Food Technologists (23,000 membership) to recognize and honor an outstanding food process which represents a significant advance in the application of food technology to food production and which has been successfully applied in actual commercial operation. For the first time since the award was initiated by IFT in 1959, a university was recipient of this prestigious award.
- Institute of Food Technologist, Indiana Section, Recognition Award (1977) - This award is a recognition by Dr. Nelson's colleagues for his outstanding contributions to the field of food technology.
- Institute of Food Technologist, Indiana Section, Recognition Award (1979) - This award is in recognition for outstanding Scientific Achievements.
- Eugene L. Grant Award (1979) - Recognition for excellence of an article appearing in The Engineering Economist.
- Fellow, Institute of Food Technologists (1980) - Recognition of unusual and meritorious contributions to the food science and technology profession.
- Gamma Sigma Delta Merit Award (1983) - Distinguished Service to Agriculture.
- R. Romanowski Memorial Award (1985) - Recognition of the contributions to Indiana Agriculture by the Indiana Food Processors Association.
- Institute of Food Technologists (Philadelphia Section) Lectureship Award (1985) - Nationally recognized person who has made significant contributions to the advancement of Food Science and Technology.
- Institute of Food Technologists (Minnesota Section) Harold Macy Award (1988) - Nationally recognized person making significant technology transfer.
- National Award for Agricultural Excellence, National Agri-Marketing Association (1990).
- Food Processors' Hall of Fame (1994) - Presented by the Mid-America Food Processors Association for distinguished leadership to the food processing industry.
- Forty-niner Service Award (1995) - the food processing industry's highest award.
- Nicholas Appert Award (1995) - Institute of Food Technologists top award for preeminence in the field of food science and technology.
- USDA Secretary's Award for Personal and Professional Excellence (1997) – Recognizes those who, over time, consistently demonstrate an outstanding level of accomplishment and notable achievements in scientific research.
- Honorary Member in "L'Association Internationale Nicolas Appert"(France) (1999)
- Tanner Lecturer – Chicago Section of IFT (1999) – Recognized for scientific achievements in the field of food engineering and processing.
- Agricultural Alumni Certificate of Distinction (2001) – Presented by Purdue Agricultural Alumni Association to persons who have distinguished themselves in their

professions and their communities with significant contributions that have enhanced the agricultural profession.

H.D. Brown Food Processing Person of the Year Award (2002) - Mid America Food Processors

Binsted Lecturer (2002) – British Section of IFT, UK

Diamond P Award(2003) John Purdue Club Distinguished Service Award

Sagamore of the Wabash(2003) State of Indiana Recognition

Elected to the International Academy of Food Science and Technology(2003)

Carl R. Fellers Award(2005). Institute of Food Technologists Award for service to the field of food science and technology and bringing honor and recognition to the profession.

World Food Prize Laureate, 2007. The “Nobel” of Food and Agriculture.

## **II. TEACHING EFFECTIVENESS:**

### **A. Courses taught in past 3 years**

FS 443 Food Processing III (each spring semester)  
Senior capstone course

B. Graduate Professional Development course

C. Courses where guest lecture...Many

## **III. RESEARCH EFFECTIVENESS:**

A. Bulk storage processing of fruits and vegetables dominated my research. Aseptic processing principles are used to store preprocessed products in large containers (+1 million gal). Research in these projects included heat penetration, chemical, microbiological and quality studies. Purdue is recognized as an International leader in this area.

B. Research on aseptic processing of particulates continues. This involved the development of sensors and state of the art equipment. Both national and international processors have visited and utilized the outstanding pilot facilities at Purdue.

C. Current studies have focused on removing food pathogens and spoilage organisms from the surfaces of equipment and fresh fruits and vegetables utilizing chlorine dioxide gas. Purdue is considered a leader in this area.

#### IV. PUBLICATIONS:

##### A. Text:

P. E. Nelson and D. Tressler. 1980. Fruit and Vegetable Juice Processing, AVI Publishing Co., Westport, CT.

P. E. Nelson, J. V. Chambers and J. H. Rodriguez. 1987. Principles of Aseptic Processing and Packaging of Food. The Food Processors Institute, Washington, D.C.

P. E. Nelson and J. V. Chambers. 1993. 2nd ed. Principles of Aseptic Processing Packaging of Food. The Food Processors Institute, Washington, D.C.

##### B. Refereed Publications(66):

##### C. Patents:

##### 1. United States(13):

<u>Title</u>	<u>Patent No.</u>
Aseptic Transfer Device	3,678,955
Method for Processing and Storing Tomatoes	3,873,753
Aseptic Storage and Valving System	3,714,956
Aseptic Storage System for Bulk Materials and Improved Microbiological Filter Therefore	3,918,942
Aseptic Bulk Material Storage System and Improved Aseptic Valve Therefore	3,918,678
Method of Aseptically Connecting A Fitting to an Aseptic Storage Tank	3,871,824
Method of Filling, Sampling and Sealing an Aseptic Tank with Sterile Product without Destroying Asepsis of Either the Sterile Product or the Tank and its Associated Valves and Fittings	3,951,184
Method of Aseptically Sealing a Storage Tank	3,998,589
Method and Apparatus for Aseptic Bulk Storage of Apple Sauce	4,022,922
Method of Filling, Sampling and Sealing an Aseptic Tank	4,047,547
-Royalties from above have accrued	
Method for Controlling Consistency of Tomato Products (1984)	4,437,934
Tomato Consistency Control Apparatus (1985)	4,557,799

Process for the Manufacture of Esters 5,302,747

Method and Apparatus for Sterilizing Food Containers(2002) .Pending

**2. Foreign: 28**

**C. Invited Lectures: Over 100 lectures worldwide**

**V. GRADUATE STUDENTS ADVISED:**

**A. Major Professor for: 16 PhD and 17 MS**

**B. Committee member for: 50 Graduate students**

**VI. RESEARCH GRANTS**

Chlorine dioxide gas as a food sterilant. \$25,000, 1 year. Industry funded. 1997

Inactivation of Microorganisms in Fruits and Vegetables of Ozone and Chlorine Dioxide.  
\$208,000, 2 years. USDA 1998

Continuous Chlorine Gas Treatment Tunnel System, \$599,790, 3 years USDA

Improving the safety of fresh fruits and vegetables with chlorine dioxide gas using a  
miniaturized industrial-size tunnel system...\$580,000, 3 years, USDA 2004

Novel aseptic processing technologies \$173,000, 2 year Industry funded 2006-

Novel Aseptic Processing and Packaging of Ready-To -Eat Frankfurters \$535,248,  
3 years USDA,2006-

Co investigator on several others

**VII. Evidence of Regional or National recognition:**

- A. See awards, activities, and invited lectures
- B. Industry consultant for several food companies worldwide
- C. CSRS Departmental Reviewer (10 Universities)
- D. Reviewer of numerous journal articles and textbooks
- E. Strategic Planning, Kasetart University(Thailand, 2000)

**VIII. EXTENSION EFFECTIVENESS:**

A. Served on numerous industry committees:

B. Have Planned;:

Indiana Canners Spring Technology Conferences  
Mold Count Schools  
Aseptic Processing and Packaging Workshops (started and now 25th<sup>1</sup> annual)  
Aseptic Processing Traiing ( 25 around the world)

C. Overall Program:

1. Have assisted our extension personnel by direct meetings, visiting processors, telephone conversations, personal visits, etc.
2. Have directed the formation and development of The Food Science Department (20 yrs)
3. Have developed successful Industrial Associates program (20 international members).
4. Developed Whistler Center for Carbohydrate Chemistry
5. Secured Federal Funding for Food Safety Engineering Center

**IX. GENERAL INVOLVEMENT:**

Horticulture Department: Past Research Coordinator, Past Graduate Committee, Past Teaching Committee Chairman, Awards and Honors Committee, Selection Committee for Department Head.

Food Sciences Institute: Advisory Committee, Undergraduate Curriculum Committee, Student Information and Scholarship Committee, Building Committee, Space Planning Committee Chairman, Building Deputy - Smith Hall, etc.

Food Science Department: First Department Head; introduced TQM in department, established Whistler Center for Carbohydrate Research(1985); obtained equipment and named room support from industry(1983-present); developed Industrial Associates group(1985), established with state officials, the Center for Value Added Research (1987);); developed State Wine Grape Program(1989), established Computer Integrated Food Manufacturing Center (1992); obtained support and funding for Food Science Building(1998), established Food Safety Engineering Center(1998), established new undergraduate recruitment program(1998).

School of Agriculture: Past Core Curriculum Committee, Past Chairman-Ag Senators, Past Agenda and Policy Committee, Master Steering Committee, Chairman Curriculum and Student Relations Committee, Ad Hoc Committee - Freeman Lectures, Area Promotions Committee,

Selection Committee for Dean, Chairman, Ag. Grad. Council, Ag. Luncheon Committee, Core Curriculum Review Committee, Centers of Emphasis Committee, Strategic Plan for Agriculture Committee.

University: Past University Senate, Past Senate Nomination Committee, Student Integrity and Responsibility Committee, Faculty Fellow, Athletic Affairs Committee (Chairman, 1981). Faculty Representative to the Big Ten and NCAA (1984 2003), Chair, -Search Committee Athletic Director (1992), Co-Chair - University Productivity Committee.