



Dr. Arthur Furst

One man can make a difference.

The gift of life places upon us all the challenge and the imperative to decide the structure and tenor of our existence. We can choose to be discouraged, disappointed, and hopeless, or we can rise to face each day with new strength and purpose. Dr. Arthur Furst has chosen well, and thus has become an inspiration to us all. Orphaned at a very young age, he has navigated life's circumstances to become an individual of worldwide prominence. His influence and gifts affect all of our lives. He challenges us with the question, "What is your contribution to life?"

Dr. Furst is a man of many dimensions, a unique human being in the truest sense. In his own words, "Unique has no qualifiers. Unique means it either is or it ain't." He is! There is much that lies below the surface of this great scientist laureate that is impossible to reveal in a little booklet like this. We can cover some of the great scientific achievements and educational milestones, but you will have to discover the warmth and humility of the man for yourself.

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Personal Background

Art Furst was born in Minneapolis, Minnesota, on December 25, 1914. The great flu epidemic of 1919 that killed millions of people left him an orphan at age four. He alternated living with relatives or in orphanages, ending up far from his birthplace in an orphanage in Los Angeles where he stayed until his teens. Fortunately, he chose to take what could have been devastating adversities and turn them into stepping-stones. Entering college heralded a new direction in his life.

Education

Art put himself through college parking cars on weekends at the Hollywood Bowl and the beaches of southern California.

He began his illustrious educational journey by earning his A.A. in Psychology at City College of Los Angeles. He never considered being a scientist. The turn to science came when he took a chemistry class to fulfill a course requirement and liked it so much that he switched his major. Later he transferred to University of California (UCLA) where he earned an A.B. in Chemistry with minors in mathematics, physics, and psychology, and then his M.A. in Chemistry with minors in mathematics and education and a teaching credential to boot!

Art also studied modern dance, and seriously considered making it his career. He has always had a burning passion for dancing, reflecting his joyful and upbeat attitude towards life. Over the years Art has enjoyed everything from the freedom of modern dance to the athletic celebration of his current favorite – Balkan dance.

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Marriage

In 1949, Art married Florence Wolovitch. She was a brilliant and talented woman who contributed not only to his scientific work, but also gave him a wonderful family. Art is quick to point out that it was Florence who graduated from college with honors! Art and Florence have four wonderful grown children and two college age grandchildren.

Career

On the day of their marriage Art obtained a position teaching Chemistry at San Francisco City College. During World War II he taught the same at City College of San Francisco, University of San Francisco, University of California at Berkeley, and San Francisco State College. While teaching he worked towards his Ph.D. in Chemistry, which he earned in 1948. Amazingly, this was accomplished in less than three years. After the war he chose to remain at the University of San Francisco.

In the early 1940's Dr. Furst conducted research on organic compounds that led to the theory of 'biological antagonism'. He tested his compounds on lactobacilli, tuberculosis, and then cancer. He pioneered research into compounds that might cure or combat cancer even before the American Cancer Society or the National Cancer Institute were established. With Dr. Michael Shimkin he coauthored one of the earliest papers showing that cancer chemotherapeutic agents could be effective.

In 1952, Dr. Furst was invited to join Stanford University Medical School in the Pharmacology Department as an Associate Professor. It was here that he developed the cancer chemotherapy program. In 1959 he first elaborated the principles that were published as a major book on cancer in 1963. The book is titled, 'Chemistry of Chelation in Cancer.'

In this book Dr. Furst drew scientifically well-founded parallels between the chemical phenomenon of chelation and the action of carcinogens and cancer chemotherapeutic agents. It was here he suggested that platinum compounds should be tested as cancer chemotherapeutic agents. He wrote the first review of the subject of metal carcinogenesis in 1969. It was an attempt to understand the mechanism of this phenomenon. Dr. Furst published his latest review on this subject in 1987. (Retirement has been essentially meaningless to this man as he continues to contribute to the betterment of all of our lives.)

Art continues to be a full-time consultant in toxicology. One area of his research is the use of earthworms as substitutes for laboratory animals in toxicity studies. He continues to travel and speak internationally. He continually publishes manuscripts and reviews. He has been and remains a key figure in the American College of Toxicology.

Curriculum Vitae of Arthur Furst, Ph.D., Sc.D., A.T.S.

Education:

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| Los Angeles City College | 1932-35 | Psych., Chemistry | A.A. |
| University of California, Los Angeles (UCLA) (minors: math, physics, education) | 1935-37 | Chemistry | A.B. |
| UCLA (minors: math, education) | 1937-40 | Chemistry Teaching Credential | M.A. |
| Stanford University (minors: waived) | 1948 | Chemistry | Ph.D. |
| University of San Francisco | 1983 | Toxicology | Sc.D. (h.c.) Doctor of Science |

Professional Experience: I

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| 1937-39 | Teaching Assistant UCLA |
| 1939-40 | Teacher, Science and Mathematics Pacific Military Academy, Culver City, California |
| 1940-47 | Instructor, Chemistry Department San Francisco City College |
| ----- | During World War II, part time at: University of California, Berkeley War Training Program; San Francisco State College: Asst. Prof. Organic Chem.; University of San Francisco: ASTP, City of San Francisco, Asst. to Director, Air Raid Warden Training |
| 1947-49 | Assistant Professor of Chemistry University of San Francisco |
| 1949-52 | Associate Professor of Chemistry University of San Francisco |
| 1949-82 | Research Associate (Retired, 1982) Mount Zion Hospital, San Francisco |

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| 1952-61 | Lecturer, Chemistry Department University of San Francisco |
| 1952-57 | Associate Professor of Pharmacology (Medicinal Chemistry) Stanford University School of Medicine |
| 1957-61 | Professor of Medicinal Chemistry, Pharmacology Dept. Stanford University School of Medicine |
| 1961-80 | Director, Institute of Chemical Biology and Professor of Chemistry, University of San Francisco (Emeritus, 1980) |
| 1976-80 | Dean, Graduate Division (Retired 1980) University of San Francisco |
| 1979 | Distinguished University Professor (Emeritus 1980) University of San Francisco |
| 1982-83 | Erna and Jakob Michael Visiting Professor Weizmann Institute of Science, Israel |

Concurrent Titles: (Retired in 1980)

- a) Consulting Professor Pharmacology, Stanford University School of Medicine
- b) Research Associate, University of California Medical Center, San Francisco
- c) Guest Scientist, Lawrence Berkeley Labs, University of California, Berkeley

Professional Experience II

During sabbatical and leaves of absences:

- 1946 Visiting Scientist, Radium Institute, Paris
- 1969 Clinical Professor, Pathology
College of Physicians and Surgeons, Columbia University, New York
- 1976 Visiting Scholar, University of Washington, Seattle and Visiting Fellow,
Battelle Seattle Research Center, Washington

Professional Activities

Continues to be a guest lecturer at a number of universities throughout the world. Invited speaker at many symposia, worldwide, and at Gordon Conferences. Since 1981, full time consultant in toxicology and chemistry to various industries and government agencies. Senior Member, Scientific Advisory Board, GNLD International, Fremont, California. (Retired 2000)

At present:

Advisory Board, School of Science, Department of Nursing and Health Sciences, California State University, Hayward, California

Advisory Board, Chemistry and Biochemistry Department, University of California, Los Angeles

Science Advisory, American Council on Science and Health, New York, New York

Board of Directors, Academy of Toxicological Sciences

Member of:

American Association for Cancer Research (Emeritus)

American Chemical Society (Emeritus, 50 Year Member) (Member, Executive Board, three years)

American College of Toxicology (Secretary to 1981, President, 1985)

American College of Nutrition

American Institute of Chemists

American Public Health Association

American Society of Pharmacology and Experimental Therapeutics (Emeritus)

California Association of Chemistry Teachers (Organizer, first President)

Genetic and Environmental Toxicology Association (GETA)

Royal Society of Medicine (Associate Member, Retired)

Society of Environmental Geology and Health

Society of Environmental Toxicology and Chemistry (SETAC)

Society of Toxicology (25 year Member)

Western Pharmacology Society (Charter Member)

Fellow of:

Academy of Toxicological Sciences

American Association for the Advancement of Science (Life Member)

American College of Nutrition

American College of Toxicology

American Institute of Chemists

New York Academy of Sciences

Listed in:

Who's Who in the World
Who's Who in America
Who's Who in Medicine and Health Care
Who's Who in the United States
American Men and Women of Science: Physical and Medical
International Biography
Who's Who in American Education
Who's Who in College and University Administration
Who's Who in the West
International Bibliography – Men of Achievement (Cambridge, Eng.)
National Register of Prominent Americans
Wisdom Hall of Fame

Honors:

Alpha Sigma Nu (National Jesuit Honor Society)
Phi Lambda Upsilon (Honorary Chemistry Scholastic Society)
Society Sigma Xi (Life Member)

1975 Seventh Distinguished Teaching Award
University of San Francisco

1977 Henry Hall Clay Award
University of San Francisco

1978 California State Senate Resolution Commending A. Furst (#1299)

1983 Doctor of Science (Honoris Causa)
University of San Francisco

1984 D.A.T.S.: Diplomate, The Academy of Toxicological Sciences (General
Toxicology) (Currently, Fellow A.T.S.)

1986 Recipient of the Klaus Schwarz Commemorative Medal;
IVth International Congress of Toxicology, Japan

1992 UCLA Alumni Award for Excellence in Professional Achievement

1994 Certificate of Recognition on 80th Birthday
California State Senate

1997 Undergraduate Scholarship (Arthur Furst Scholarship)
Endowed in honor of Arthur Furst by GNLD International

Publications:

Over 300 publications in the fields of: (includes research papers, proceedings and abstracts)

- Cancer Research – Carcinogenesis, and Chemotherapy (including viruses)
- Organic Synthesis
- Psychopharmacology
- Toxicology

Miscellaneous:

- 1970 Consultant (temp.) World Health Organization (IARC)
Facilitated inauguration of IARC publications
- 1975 American Public Health Association Task Force on Environmental Problems
- 1976 National Research Council. Commission on Natural Resources.
Board of Mineral Resources.
- 1978 Committee to Review Standards, Mine Safety and Health, for the
Secretary of Labor, U.S.A.
- 1986-91 Board of Trustees, Pacific Graduate School of Psychology, Palo Alto,
California

Member of Editorial Board:

Previous:

Current Contents/Life Sciences and CC/Physical Sciences
Journal American College Toxicology
Journal Combustion Toxicology
Journal Environmental Pathology and Toxicology
Toxicology and Applied Pharmacology
Toxicology and Industrial Health

Present:

Biological Trace Element Research
International Journal Toxicology
Indoor + Built Environment
Biomedical and Environmental Sciences

Endowments:

1. American College of Toxicology
Award for Best Student Poster
2. Health Library, Stanford University
Florence Furst Memorial Fund
3. Hebrew Free Loan Association
Furst Family Student Loan Fund
4. Pacific Graduate School of Psychology
Annual Ethics Lecture
Florence Furst Memorial Student Loan Fund
5. University of California, Los Angeles
Undergraduate Award for Outstanding Research
6. University of San Francisco
Faculty of Science Award for Outstanding Research for Betterment of
Humankind
7. Stanford University Health Library
The Arthur Furst Lectureship in Nutrition and Disease