

# Benson is Supelco Award winner



Andrew A. Benson

Andrew A. Benson of the Scripps Institution of Oceanography, University of California at San Diego, La Jolla, California, has been selected winner of the Supelco AOCS Research Award for his extensive work with lipid biochemistry of plants and marine organisms. He will receive the award during the 1987 AOCS annual meeting in New Orleans, where he will present an acceptance address. The award consists of a plaque, a \$4,000 honorarium and some travel funds provided by Supelco Inc.

Benson, 69, continues active research in the area of lipid metabolism, chiefly in the marine environment. His research areas have included bioorganic chemistry, nuclear applications, photosynthesis, lipid metabolism and cell

membrane biology, marine biology, salmon physiology, deep ocean fish physiology, symbiotic biology of coral, and halophyte biology. He has authored approximately 200 publications and has made major contributions to the understanding of the chemical composition of plants and the food chain in the marine environment.

Early in his career, Benson collaborated with Melvin Calvin at the University of California at Berkeley on the processes of carbon dioxide fixation in photosynthesis. During his work with photosynthesis, he developed radioactive tracer techniques that have been adopted by laboratories throughout the world. During subsequent work at Pennsylvania State University, he and his associates initiated research on lipid metabolism in higher plants. This resulted in the discoveries of the plant sulfolipid and phosphatidylglycerol. His research also gave fundamental insight into the nature of the membrane structure of many organelles and cells from a variety of tissues.

Benson came to Scripps Institution of Oceanography in 1962. His group at Scripps was the first to recognize the importance of wax esters in marine food chains and

was instrumental in elucidating the pathway of wax ester biosynthesis and characterizing the enzymes responsible for their breakdown. In the 1970s, he began studying arsenic metabolism in marine organisms. He investigated the role of arsenic in the marine system and demonstrated that marine algae can detoxify arsenic.

Colleagues have described him as a structural chemist, enzyme chemist, cellular physiologist and molecular anatomist.

"It is most remarkable to work with Andy and see how his mind functions in such a wide variety of creative ways. There is a feeling of joy and pleasure in any lab where Andy's presence is felt," one colleague has written. Another colleague said, "Dr. Benson's contributions to the lipid field are characterized by a high degree of originality, and have greatly stimulated further investigations into the chemistry, metabolism and function of lipids in living cells."

Benson is slated to present his acceptance speech at the annual meeting in New Orleans on Monday morning, May 18. He will receive the Supelco Award plaque and honorarium during the inaugural-awards breakfast Wednesday, May 20.

# Linfield receives Bailey award

Warner M. Linfield received the 1987 Alton E. Bailey Award at the North Central Section's Feb. 17 meeting "in recognition for his pioneering research into the chemistry of surfactants and detergents derived from fatty acids."

Linfield, now a chemical consultant, served as leader of chemical modifications research for the U.S. Department of Agriculture, Agricultural Research Service, at the Eastern Regional Research Laboratory (ERRC) before his retirement. In his introduction of Linfield, Jerry Maerker, an ERRC

colleague, described him as a "researcher par excellence" with outstanding experience in seven research areas. Most notable have been his work with soap-based detergents and antibacterials in soap, Maerker said.

In his acceptance address, Linfield spoke about ERRC's efforts to develop lime soap dispersing agents for tallow-based soaps.

The research was initiated because of water pollution problems related to some of the household and industrial detergents containing phosphate, Linfield said. The

group decided to try to develop nonpolluting hard water detergents from inedible tallow.

Tallow was attractive because of its low cost, long history of safety, high washing efficiency and biodegradability, Linfield said. However, its drawbacks were poor solubility in cold water and greasy scum formation in hard water. Linfield said the research team overcame these drawbacks by creating lime soap dispersing agents (LSDA) from tallow and other domestic fats or oils.

How LSDAs work is not well



↑ During the North Central Section's informal cocktail hour, Jerry Maerker (left) talks with Ed Frankel and his wife while Warner Linfield swaps stories with Herb Dutton. Frankel and Dutton are previous recipients of the Bailey Award.

Warner Linfield (right) displays his → Bailey Award plaque. With him are Jerry Maerker, David Tandy and North Central AOCS Section president Gerry Szajer.



↑ Shirley and Warner Linfield converse with David Tandy, chairman of the Bailey Award selection committee, at the award dinner.

understood, but they prevent the formation of lime soap scum, improve the solubility of soap in cold water, and do not adversely affect fabric treated with flame-proofing finishes. Also, in many cases, the washing performance of combinations of tallow soap and an LSDA is equal to that of detergents with a high phosphate content, Linfield said.

Linfield gave two reasons why no U.S. companies have adopted the soap-LSDA technology. First, he said, it's human nature to reject what is new. "What is innovative is initially rejected by the established order, but time and common sense can overcome this," Linfield said. Also, before production of LSDA soaps can occur in the U.S., companies would have to build new soap plants to replace those dismantled after World War II. Among the countries either considering the technology or that have it already in place are the People's Republic of China, South Korea, Japan and France, he said.

Besides his work in LSDAs, Linfield has done research in the development of cationic fabric softeners and deodorant soaps, the synthesis of novel surfactants and the enzymatic hydrolysis and synthesis of lipids with the aid of various lipases.

Linfield was born in Germany and received his early technical training there. In 1940 he received a B.S. degree in chemistry from George Washington University; in 1943 he completed his Ph.D. in pharmaceutical chemistry at the University of Michigan. He has worked for Emulsol Corporation, E.F. Houghton and Co., Quaker Chemical Products Co., Armour and Co., Culver Chemical Co. and the IIT Research Institute. He has

served on AOCS committees and as associate editor for *JAACS*.

The sponsors of the 1987 Bailey Award were: Anderson International Corporation, Bunge Edible Oil Corporation, Central Soya, Centrico Inc., EMI Corporation, Harshaw/Filtrol, Hoffman LaRoche, Industrial Filter & Pump Mfg. Co., Interstate Foods Co., Kraft Foods U.S., SCM Durkee Foods, Supelco Inc., The Procter and Gamble Co., UIC Inc. and Wurster and Sanger Inc.

## NorCal officers

The NorCal Section has elected officers for 1987. Penny Wells, director of nutrition for KabiVitrum Inc., Alameda, California, is chairperson. Blake Hendrix, process engineer for Johnson Loft Engineering Inc., will serve as chairperson-elect and program chair.

Members of the steering committee are past chairperson Glenn Fuller, research leader at USDA's Western Regional Research Center, Albany, California; Robert Faulkner, director of the technical department for LSI Bulk Terminals, Oakland, California; Steve Goheen,

senior application chemist for Bio-Rad Laboratories, Richmond, California; Dennis Taylor, research and development manager, Harshaw/Filtrol Partnership, Pleasanton, California; and Lee Tsai, research chemist, USDA's Western Regional Research Center, Albany, California.

Meetings are scheduled for Friday, Aug. 21, 1987, and Friday, Dec. 4, 1987. The August meeting will be in California wine country; the December meeting will be held in San Francisco. For more information, contact Penny Wells, Kabi-Vitrum Inc., 1311 Harbour Bay Parkway, Alameda, CA 94501.

## Fund drive: Early returns



Stephen S. Chang

The AOCS Foundation fund drive to solicit donations for construction of the society's new headquarters got a boost in February with its first Foundation Donor Council pledge.

AOCS member Stephen S. Chang, who served as society president in 1970, became the first to make a contribution at the Foundation Donor Council level. To qualify for the Foundation Donor Council, an individual or corporation must make a minimum contribution of \$25,000.

As a result, one room in the new headquarters will be named for Chang when the building is dedicated.

An AOCS member since 1952, Chang, a native of Beijing, China, came to the U.S. in 1947. He has worked extensively in lipid chemistry and flavor chemistry of foods. He served as chairman of

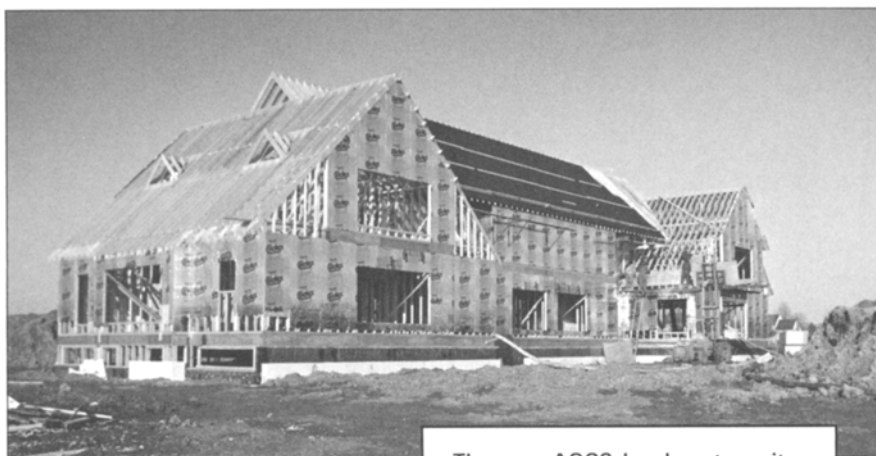
the Food Science Department at Rutgers University, New Brunswick, New Jersey, for nine years, until June 1986. At that time, he returned to the food science faculty to concentrate on his research.

While Foundation Board members continue to contact AOCS members and industry groups served by the society about the fund drive, Ed Campbell is organizing a celebration for the fundraising campaign at the 1987 annual meeting in New Orleans.

A special Foundation Board booth will be set up in the exhibit hall at the meeting. There, meeting participants will be able to buy t-shirts, caps and raffle tickets for special prizes to be given away in drawings at the meeting. The intent, according to organizers, is to remind members of the fundraising effort and to encourage them to support the new headquarters project.

The fund drive campaign officially began Feb. 18. By March 1, pledges and donations totaling approximately \$35,000 had been received. The Foundation Board's goal is to raise \$400,000 for the construction project.

The headquarters building is being constructed in southwestern Champaign, Illinois. By late February, construction workers were enclosing the upper level of the two-and-a-half-story building.



The new AOCS headquarters site, as it appeared March 2, 1987.

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## Methods for Nutritional Assessment of Fats

**Edited by**  
**Joyce Beare-Rogers**

**\$30 Members**  
**\$50 Nonmembers**

A new AOCS monograph that provides invaluable guidance for planning research involving nutritional assessment of fats. In a dozen concise chapters, leading researchers take the reader through the sequence of steps needed to produce valid, useful results. The first chapter discusses experimental design, followed by chapters on selection and use of test animals, formulating diet, characterizing the test material, studying tissue lipids, using epidemiological data, interpreting results and, finally, preparing the data for publication. This collection of procedures and comments provides a useful review of some of the requirements in the nutritional assessment of a dietary fat.

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## Methods for Nutritional Assessment of Fats