

# Profile: Andrew A. Benson

Andrew A. Benson delights in solving what appears to be the unsolvable. This and his inquisitive and inventive nature are among the talents that have gained him great respect as a scientist.

In recognition of his extensive work with lipid biochemistry of plants and marine organisms, Benson, of the Scripps Institution of Oceanography, University of California, San Diego, in La Jolla, California, was honored at the AOCS meeting in New Orleans in May as the 1987 Supelco AOCS Research Award recipient.

Known as Andy to colleagues and friends, Benson grew up near the California farm where the family raised fruit, sheep, pigs and cattle. But his dad wasn't a typical farmer; a medical doctor, he farmed from 5 a.m. to 9 a.m. and 5 p.m. to dark, and held office hours and delivered babies in-between and at night. Admitting he can live without farm life, Benson, however, credits this environment with fostering his mechanical knowledge, and jokes that his success in the laboratory is "because I can do plumbing and boil water faster than anyone."

Describing himself as "a tinkerer," he explains, "That's the way you make progress in science. Sometimes nothing works, and then you fall through a trapdoor and make a wonderful discovery."

Much of his research he calls "radiochromatographic exploration." This was the title of his Supelco Award address, which he presented at the 1987 AOCS annual meeting in May. In it, he said, "I have been fascinated by the power of the radiochromatographic method and the metabolic systems it has revealed." His talk is published in this *JAACS*, starting on page 1309.

Benson, who turns 70 this month, continues research in lipid metabolism. During the past month, he has spent time in the fjords of British Columbia to observe salmon, eagles, Indians and bears; this month, he is scheduled to attend conferences in London and Siberia. His research areas during his career have included bioorganic chemistry,



nuclear applications, photosynthesis, lipid metabolism and cell membrane biology, marine biology, salmon physiology, deep ocean fish physiology, symbiotic biology of corals and mangrove biology.

He did his undergraduate studies at the University of California in Berkeley, "the citadel of physical chemistry (thermodynamics), where G.N. Lewis was the founding father of the department of chemistry; about 10 of his students have received Nobel prizes." Benson believes this was "because Lewis fostered unbridled curiosity in his students." Upon graduation, Benson went to study under Carl Niemann and Linus Pauling, at Cal Tech, which he terms "a first-class place."

"All of these teachers guided me," Benson said, noting that the best lesson was "learning patience, to keep digging at the problems until they are solved, whether it be in my research or in my hobbies."

He later returned to the Berkeley department and conducted research on carbon dioxide fixation in photosynthesis with Sam Ruben and Martin Kamen, inventors of carbon 14. Ruben and Kamen used the first cyclotron to make their artificial radioactivity. "I used the first large batch of carbon 14 for my photosynthesis experiments," Benson says, adding, "Stupidly I didn't publish the findings." And

so he has a word of wisdom to young researchers: "Write up your results and publish them."

Of course, at the time, publishing wasn't a priority, he admits. "When you're working on an impossible problem and it's 1943, during the war, it's pretty hard to think about publishing."

Drafted, he was forced to temporarily cease working on the project. He recalls, "I had been working with Sam (Ruben) to understand phosgene poisoning. I made the first radioactive phosgene to study the protein aggregation it caused. The irony of this occurred in 1943, just after I had left. Sam was trying to transfer some phosgene (boiling point 8 C) and it blew up in his face. Thus, a most brilliant mind was lost to science."

A conscientious objector, Benson spent almost two years fighting fires for the U.S. Forest Service in the California and Nevada mountains. Afterward, he went to Stanford University to work in chemistry on anti-malarial drug synthesis. Then, he went back to Berkeley to continue working on photosynthesis with Melvin Calvin. Benson worked on that project for nine years, developing 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. It was at Penn State that he and Nick Pelick became friends. Pelick and Benson were developing techniques for producing radioactive fatty acids from algae in Benson's laboratory. "I learned a lot from Nick; he was always loaded with valuable practical information," Benson said, noting that he was pleased when the talented Pelick went on to co-found Supelco Inc. (which currently funds the Supelco AOCS Research Award) and to become quite successful.

In 1961-1962, Benson was back

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in California, working with Jim Mead. In 1962, he moved to the Scripps Institution of Oceanography at La Jolla, California, where he has remained. His group there 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. As part of this work, he has investigated the role of arsenic in the marine system and has demonstrated that marine algae can detoxify arsenic.

"I was interested in doing research with phosphorus deficiencies in plants, and the area most prevalent in this phenomenon is the ocean," he explains. His research showed that the earliest plants had somehow figured out how to solve the problem of arsenic toxicity. "Some algae spit arsenic out directly while some transform it into non-toxic substances," he says, noting that positive use of arsenic had been known for some time, such as Paul Ehrlich's invention early this century of the arsenical Salvarsan (606) to kill the blood parasites causing syphilis. (This, he claims,

is only one of his many arsenic pharmacy history stories).

Benson, acknowledging that his research has spanned from radiation laboratories, agriculture and medicine to marine fields, explains, "The interactions of many fields make life interesting and fun."

He works seven days a week, generally. "I have a lot of fun," he says, adding that he currently is in the midst of the identification of an unknown arsenical intermediate.

His exploits *sound* fun. Since 1966, he has been to Australia and the Great Barrier Reef at least 10 times to conduct research with the Australian Institute of Marine Science on problems specific to the reef. Some of this work has centered on coral to study the symbiosis of animal and plant forms. His latest research there has been with giant clams weighing 450 to 600 pounds apiece. He has studied the lipids in the swim bladder of deep sea fish which are found about two miles under water to discover big masses of cholesterol and sphingolipids, "but we don't understand quite why," he admits.

In addition, since 1968, he has spent August and September each year in British Columbia, Canada, to study the degeneration of spawning salmon. "We are asking

why do they kick the bucket? This is also a good study model for human aging," he says. It also has been a time to establish friendships with the native coastal Indians. "We live on board our ship, and our Indian friends advise and catch fish for us. They are amazing. They can look at the water, see 'marks,' and say how many fish are there."

Rather than resenting the time Benson spends on his research, his wife, Dee, expresses respect and pride for his achievements. In fact, she tells her friends that he can fix anything and recommends that they consult him whenever they have a clothing stain.

"I'm the local detergents expert," Benson jokes. He is also proud of his wife, who owns a travel agency and is much more people-oriented than he. "She knows everyone at my work place and I don't," he says, adding that Dee enjoys playing golf and would like to do it professionally.

He does find time for hobbies—gardening, bicycling, fixing his '61 Mercedes, which "goes like a bomb." He used to rock climb, "but now I stick to bicycling as it isn't so far to fall."

Because of age requirements, he is slated to retire by mid-1988. However, he plans to continue to "tinker." One aim is to find someone to produce commercially a star finder he has invented.

He also would like to tackle "a few pet peeves." One is the metric system, which, he feels, "doesn't apply to the common man." Another is "stupid things like lipid nomenclature." He explains, "Committees are deadly about rules and regulations." He would like to write articles against the metric system's general use and conduct more arsenic research.

While enjoying the challenges his research work has offered over the years, Benson also looks back fondly on the collaboration and stimulation provided by colleagues. "I have developed a lot of good friends through these years"—another treasure discovered in the course of his research.

## Dedication

Dedication ceremonies for the new AOCS headquarters building will be held at 10 a.m. Saturday, November 7, 1987, on the headquarters grounds, 1608 Broadmoor, Champaign, Illinois.

Following the ceremonies, a buffet brunch will be held in the new building.

Dedication activities will begin Friday afternoon, Nov. 6, 1987, with a symposium, "Fats and Oils: Looking Toward the Year 2000," organized by the North Central Section of AOCS. The symposium will include talks on fats and oils in U.S. agriculture; a European perspective on fats and oils; a U.S. congressional view on agricultural research, nutritional considerations; oleochemicals, and soaps, surfactants and detergents. The symposium will be held at Jumer's Castle Lodge in Urbana, Illinois.

Following the symposium, a reception will be held at 6 p.m., with dinner at 7 p.m. An after-dinner speaker will be featured.

For more details or to make arrangements to attend, contact AOCS, PO Box 3489, Champaign, IL 61821-0489, USA, telephone 217-359-2344.

## Kraft is 4th Donor Council member

Kraft Inc., a multinational food and consumer products company, has become the fourth member of the Foundation Donor Council in the AOCS Foundation fund-raising campaign for construction of the new headquarters in Champaign, Illinois.

Kraft, headquartered in Glenview, Illinois, announced the gift during July.

To qualify for the Foundation Donor Council, an individual or corporation must make a minimum contribution of \$25,000. As a result of Kraft's contribution, one room in the new headquarters will be named for Kraft when the building is dedicated in November.

Other members of the Foundation Donor Council are two corporations—Archer Daniels Midland

Co. (ADM) and Emery Chemicals—and one individual—Stephen S. Chang.

Kraft consists of Kraft food products groups and Duracell battery operations.

By late July, donations to the fund drive totaled more than \$267,000.

Other major contributions since those listed in the August *JAACS* include the following:

Major Benefactors (\$5,000 minimum)—Central Soya Inc., Vista Chemical Co. and De Smet.

Individual Benefactors (\$1,000 minimum)—Edmund W. Lusas (to be credited to the Protein & Co-Products Section Fund pledge), Herzog Hart Corp., Rustco Products Co., Ag Processing, Eastman Chemical Products and S.A. Fractionnement Tirtiaux.

Other corporations that have supported the fund drive since the last listing include Johnson-Loft Engineers Inc. and H.L. Blachford Ltd./Ltee.



Marion P. Williams, left, vice president of product development at Kraft Inc., presents AOCS President Robert Hastert with the company's donation. R. G. Krishnamurthy, right, senior group leader at Kraft, looks on.

## AOCS certifies 72 chemists

The AOCS Examination Board has certified 72 approved chemists working in 47 independent analytical laboratories, based on the chemists' participation in the AOCS Smalley Check Sample Program.

Applicants for the approved chemist designation must demonstrate proficiency using designated methods in fats and oils and oil-seeds analysis on check samples distributed through the Smalley Program.

Laboratories are listed in alphabetical order. Each listing gives the laboratory name, address and telephone number; the name(s) of the approved chemist(s) at that laboratory, and the categories in which the laboratory chemist(s) received certification.

**A&A Laboratories**  
100 N. Spring  
Springdale, AR 72764  
501-756-1270

**Don Worley**  
Oil Cake and Meal  
Protein Concentrates  
Fish Meal

**A&L Plains Agricultural Labs**  
302 34th St.  
PO Box 1590  
Lubbock, TX 79408  
806-763-4278

**Janet M. Duran**  
Cottonseed  
Oil Cake and Meal without Fiber  
Protein Concentrates without Fiber

**Abed Laboratories Inc.**  
2437 6th St.  
Berkeley, CA 94710  
415-843-0507

**Mamdouh H. Abed**  
Cottonseed Oil and Other Cup  
Refined Fatty Oils  
Tallow and Grease

**Associated Laboratories Inc.**  
806 N. Batavia  
Orange, CA 92668  
714-771-6900

**Henry M. Espoy**  
**Edward S. Behare**  
Oil Cake and Meal  
Soybean Oil and Other Column  
Refined Fatty Oils  
Tallow and Grease

Protein Concentrates  
Aflatoxins in Cottonseed Products

**Charles V. Bacon Inc.**  
503 Lyons Ave.  
Irvington, NJ 07111  
201-926-6160

Charles V. Bacon Jr.  
Richard W. Martin  
T.M. Narayanan Nair

Cottonseed Oil  
Soybean Oil and Other Fatty Oils  
Tallow and Grease  
Fish Oil

**Charles V. Bacon Inc.**  
50 New Ave.  
PO Box 372  
Lemont, IL 60439  
312-257-6322

Richard A. Meyer  
Tallow and Grease

**Charles V. Bacon Inc.**  
1448 McArthur Ave.  
PO Box 97  
Marrero, LA 70072  
504-347-1468

Albert M. Reynaud  
Norman E. Landeche

Soybeans  
Oil Cake and Meal  
Cottonseed Oil  
Soybean Oil and Other Fatty Oils  
Protein Concentrates  
Fish Meal  
Fish Oil  
Fish Solubles

**Barrow-Agee Laboratories Inc.**  
405 Saturn Dr.  
PO Box 156  
Memphis, TN 38101  
901-332-1590

Frank Tenent  
Edgar H. Tenent  
Lynn A. Hawkins

Cottonseed  
Peanuts  
Soybeans  
Oil Cake and Meal  
Cottonseed Oil  
Soybean Oil and Other Fatty Oils  
Protein Concentrates  
Tallow and Grease

Fish Meal  
Fish Oil  
Fish Solubles  
Aflatoxin in Cottonseed Products  
Aflatoxin in Peanut Products

**Caleb Brett U.S. A. Inc.**  
4927 Jefferson Highway  
PO Box 10128  
Jefferson, LA 70181  
504-733-5483

Shams Mustafa

Cottonseed  
Soybeans  
Peanuts  
Oil Cake and Meal  
Cottonseed Oil  
Soybean Oil and Other Fatty Oils  
Tallow and Grease  
Protein Concentrates  
Fish Oil  
Fish Solubles

**Central Analytical Labs. Inc.**  
2600 Marietta Ave.  
Kenner, LA 70062  
504-469-3511

Leon J. Cabes, Jr.  
Gerald J. Maus

Soybeans  
Oil Cake and Meal  
Soybean Oil and Other Column  
Refined Fatty Oils  
Protein Concentrates  
Tallow and Grease

**Chem-Staat Labs. Inc.**  
Crowder Industrial Park  
Doniphan & Francis, Box 789  
Neosho, MO 64850  
417-451-5973

Garrett Staat  
Randall Ford

Oil Cake and Meal  
Protein Concentrates  
Aflatoxin in Cottonseed Products  
Aflatoxin in Corn Products

**Enviro-Test Inc.**  
319 Ogden Ave.  
Downers Grove, IL 60515  
312-963-4672

Robert J. Jakubiec  
Julianne Jakubiec  
MIU on Tallow and Grease

**Fox Testing Laboratories**  
201 Paris  
PO Box 1299  
Lubbock, TX 79408  
806-763-4518

Ronald M. Fox

Cottonseed  
Peanuts  
Oil Cake and Meal  
Cottonseed Oil  
Soybean Oil and Other Fatty Oils  
Protein Concentrates  
Aflatoxin in Corn Products  
Cellulose (linters)

**Hahn Laboratories**  
1111 Flora St.  
PO Box 1177  
Columbia, SC 29202  
803-799-1614

Edward R. Hahn  
Frank M. Hahn  
James B. Scoggins

Cottonseed  
Peanuts  
Soybeans  
Oil Cake and Meal  
Cottonseed Oil  
Soybean Oil and Other Fatty Oils  
Tallow and Grease  
Protein Concentrates  
Cellulose (linters)

**Industrial Laboratories Co. Inc.**  
1450 E. 62nd Ave.  
PO Box 16207  
Denver, CO 80216  
303-287-9691

Paul D. Ochs  
Tallow and Grease

**Industrial Laboratories**  
3001 Cullen St.  
Fort Worth, TX 76107  
817-332-2259

Donald C. Strathdee

Oil Cake and Meal  
Protein Concentrates

**Ingman Laboratories Inc.**  
2945 34th Ave. So.  
PO Box 15305 Commerce Sta.  
Minneapolis, MN 55415  
612-724-0121

Glen H. Kyle

Philip L. Maiers

Soybeans  
Oil Cake and Meal  
Protein Concentrates  
Tallow and Grease

**Int'l Cont. Maatschappij BV**

Malledijk 18 PO Box 200  
3200 AE Spijkenisse  
The Netherlands  
01880-23311

J. Venlet

Oil Cake and Meal without Fiber  
Protein Concentrates without Fiber  
Aflatoxin in Peanut Products

**Iowa Testing Laboratories**

Hwy. 17 No.  
PO Box 188  
Eagle Grove, IA 50533  
515-448-4741

Jack W. Henry

Oil Cake and Meal  
Protein Concentrates  
Soybean Oil and Other Column  
Refined Fatty Oils

**K-Testing Laboratory Inc.**

365 S. Main St.  
Memphis, TN 38103  
901-525-0519

B. Lee Keating  
Larry L. Kennon

Cottonseed  
Oil Cake and Meal  
Cottonseed Oil  
Soybean Oil and Other Fatty Oils  
Protein Concentrates

**LaMura Laboratories Inc.**

1314 Fourth St. S.W.  
Mason City, IA 50401  
515-424-9461

Donna Lee LaMura

Oil Cake and Meal  
Protein Concentrates  
Soybean Oil without Bleach Color

**Laucks Testing Labs. Inc.**

940 S. Harney St.  
Seattle, WA 98108  
206-767-5060

James M. Owens

Fish Meal

**Law & Company**  
1763 Montreal Circle  
PO Box 1558  
Atlanta, GA 30301  
404-934-8200

Robert E. Kieffer

Cottonseed Oil and Other Cup  
Refined Fatty Oils  
Tallow and Grease  
Aflatoxin in Corn Products

**Mid-Continent Laboratories Inc.**

1511 Highland  
PO Box 123  
Greenwood, MS 38930  
601-453-3714

Garlon J. Beckwith

Cottonseed  
Soybeans  
Oil Cake and Meal  
Protein Concentrates  
Cottonseed Oil  
Soybean Oil and Other Fatty Oils

**Mid-Continent Laboratories Inc.**

879 Foley St.  
PO Box 2551  
Jackson, MS 39207  
601-353-1183

Plautus Phillips  
Charles R. Norris

Cottonseed  
Soybeans  
Oil Cake and Meal  
Cottonseed Oil  
Soybean Oil and Other Fatty Oils  
Protein Concentrates  
Tallow and Grease

**Mid-Continent Laboratories Inc.**

1354 Madison Ave.  
PO Box 1521  
Memphis, TN 38101  
901-725-1722

Donald Britton  
Charles D. McCorkle

Cottonseed  
Soybeans  
Oil Cake and Meal  
Cottonseed Oil  
Soybean Oil and Other Fatty Oils  
Protein Concentrates  
Tallow and Grease

Cellulose (linters)

**Morris Testing Laboratories**

807 Main St.  
PO Box 803  
Macon, GA 31202  
912-742-7835

John Wieters

Cottonseed  
Peanuts  
Oil Cake and Meal  
Protein Concentrates  
Aflatoxin in Cottonseed, Peanut  
and Corn Products

**New Jersey Feed Laboratories**

910 Pennsylvania Ave.  
CN 06650  
Trenton, NJ 08650-6650  
609-392-8818

Carl W. Schulze

Oil Cake and Meal  
Protein Concentrates

**Nippon Yuryo Kentei Kyokai**

No. 9 3-chome, Kaigandori  
Naka-ku  
Yokohama, Japan 231  
045-201-8337

H. Hirayama

Soybeans  
Tallow and Grease

**Pattison's Laboratories**

211 E. Monroe St.  
PO Box 346  
Hurling, TX 78551  
512-423-3196

Burt O. Pattison

Cottonseed  
Oil Cake and Meal without Fiber  
Cottonseed Oil without  
Bleach Color  
Protein Concentrates without Fiber

**Peterson Laboratories**

19 E. 4th St.  
PO Box 886  
Hutchinson, KS 67504-0886  
316-665-5661

Dennis H. Hogan  
Robin Jackson

Oil Cake and Meal  
MIU on Tallow and Grease

## Protein Concentrates

**Pope Testing Laboratories**  
2618-1/2 Main St.  
PO Box 903  
Dallas, TX 75221  
214-742-8491

Leon S. Hunter

Cottonseed  
Peanuts  
Oil Cake and Meal  
Cottonseed Oil and Other Cup  
Refined Fatty Oils  
Protein Concentrates  
Aflatoxin in Corn Products  
Cellulose (linters)

**Porter Testing Laboratory**  
1014 S. Walker  
PO Box 25303  
Oklahoma City, OK 73125  
405-235-7985

James S. Daves

Cottonseed  
Peanuts  
Tallow Grease

**SGS Control Services Inc.**  
20 Lafayette St.  
Carteret, NJ 07008  
201-541-7200

Frank W. Weber

Peanuts  
Oil Cake and Meal  
Cottonseed Oil  
Soybean Oil and Other Fatty Oils  
Protein Concentrates  
Tallow and Grease  
Fish Oil  
Fish Solubles  
Aflatoxin in Peanut Products

**SGS Control Services Inc.**  
1201 W. 8th St.  
PO Box 550  
Deer Park, TX 77536  
713-479-7170

Zana G. Thomson-Bodiford  
Vaji Mohtashami

Soybeans  
Oil Cake and Meal  
Cottonseed Oil and Other Cup  
Refined Fatty Oils  
Protein Concentrates  
Tallow and Grease

Fish Oil  
Aflatoxin in Cottonseed, Peanut  
and Corn Products

**SGS Control Services Inc.**  
151 James Dr. West  
PO Box 1328  
Kenner, LA 70063  
504-469-6401

John W. Thomas  
Boyce H. Butler  
Mumtaz Haider  
  
Soybeans  
Oil Cake and Meal  
Cottonseed Oil  
Soybean Oil and Other Fatty Oils  
Protein Concentrates  
Tallow and Grease  
Fish Meal  
Fish Oil  
Fish Solubles  
Aflatoxin in Corn Products

**SGS Control Services Inc.**  
1019-1025 Harbor  
PO Box 13484  
Memphis, TN 38113  
901-775-1660

Sandra Holloway

Soybeans  
Oil Cake and Meal  
Cottonseed Oil  
Soybean Oil and Other Fatty Oils  
Protein Concentrates  
Tallow and Grease  
Fish Meal  
Fish Oil

**Southern Testing & Research**  
607 Park Ave.  
PO Box 1849  
Wilson, NC 27894  
919-237-4175

W.A. Bridgers Sr.

Oil Cake and Meal  
Protein Concentrates

**Texas Testing Laboratories Inc.**  
1610 S. Laredo  
San Antonio, TX 78207  
512-224-4823

Anthony Rodarts

Oil Cake and Meal without Fiber  
Protein Concentrates without Fiber

**Thionville Laboratories Inc.**  
5440 Pepsi St.  
PO Box 23687  
New Orleans, LA 70183  
504-733-9603

Paul C. Thionville  
Robert Shelton

Peanuts  
Soybeans  
Oil Cake and Meal  
Cottonseed Oil  
Soybean Oil and Other Fatty Oils  
Protein Concentrates  
Tallow and Grease  
Fish Meal  
Fish Oil  
Fish Solubles  
Aflatoxin in Cottonseed, Peanut  
and Corn Products

**Wolf Laboratories**  
15 Rue Charles Paradinas  
92110 Clichy France  
(16) 47 30 04 40

Alain Karleskind  
Michel J. Blanc  
Tallow and Grease

**Woodson-Tenent Laboratories Inc.**  
313 E. Helena St.  
PO Box 164  
Dayton, OH 45404  
513-222-4179

Douglas McLemore

Soybeans  
Oil Cake and Meal  
Soybean Oil with Color  
Protein Concentrates  
MIU on Tallow and Grease

**Woodson-Tenent Laboratories Inc.**  
3507 Delaware Ave.  
PO Box 1292  
Des Moines, IA 50305  
515-265-1461

John R. Ledin  
Ardin L. Backous  
William G. Slagle

Soybeans  
Oil Cake and Meal  
Soybean Oil and Other Column  
Refined Fatty Oils  
Protein Concentrates  
Tallow and Grease  
Fish Meal

**Woodson-Tenent Laboratories Inc.**  
Atlas Circle  
PO Box 1097  
Gainesville, GA 30501  
404-536-5909

Elaine Abbott

Soybeans  
Oil Cake and Meal  
Soybean Oil without Bleach Color  
Protein Concentrates  
MIU on Tallow and Grease  
Fish Meal

**Woodson-Tenent Laboratories Inc.**  
345 Adam St.  
PO Box 2135  
Memphis, TN 38101  
901-525-6333

John F. Peden  
Lars Reiman  
Richard Wall

Cottonseed Oil  
Soybean Oil and Other Fatty Oils  
Tallow and Grease  
Aflatoxin in Cottonseed, Peanut  
and Corn Products

**Woodson-Tenent Laboratories Inc.**  
1805 E. 5th St.  
PO Box 5341  
North Little Rock, AR 72119  
501-945-7188

Guy E. Moore Sr.

Cottonseed  
Soybeans  
Oil Cake and Meal  
Cottonseed Oil  
Soybean Oil and Other Fatty Oils  
Protein Concentrates  
Tallow and Grease  
Fish Meal

## Certified labs

The following laboratories have been certified by AOCS for 1987-88 in using AOCS methods in analysis of soybean meal. The laboratories qualify by enrolling for a special series of soybean meal analytical tests and are eligible for use as referee chemists in soy meal analysis for the National Soybean Processors Association.

- A & A Laboratories Inc., 100

N. Spring, Springdale, AR  
72764

- Barrow-Agee Laboratories Inc., 405 Saturn Dr., PO Box 156, Memphis, TN 38101
- Caleb Brett U.S.A. Inc., 4927 Jefferson Highway, PO Box 10128, Jefferson, LA 70181
- Chem-Staat Laboratories Inc., Crowder Industrial Park, Doniphan & Francis, Box 789, Neosho, MO 64850
- Ingman Laboratories Inc., 2945 34th Ave. S., PO Box 15305, Minneapolis, MN 55415
- K-Testing Laboratory Inc., 365 S. Main St., Memphis, TN 38103
- Mid-Continent Labs. Inc., 1354 Madison Ave., PO Box 1521, Memphis, TN 38101
- New Jersey Feed Laboratories, 910 Pennsylvania Ave., CN 06659, Trenton, NJ 08650-6650
- SGS Control Services Inc., 151 James Drive West, PO Box 1328, Kenner, LA 70063
- SGS Control Services Inc., 1019-1025 Harbor, PO Box 13484, Memphis, TN 38113
- Thionville Laboratories Inc., 5440 Pepsi St., PO Box 23687, New Orleans, LA 70183
- Woodson-Tenent Laboratories Inc., 313 E. Helena St., PO Box 164, Dayton, OH 45404
- Woodson-Tenent Labs. Inc., 3507 Delaware Ave., PO Box 1292, Des Moines, IA 50305
- Woodson-Tenent Labs. Inc., Atlas Circle, PO Box 1097, Gainesville, GA 30501
- Woodson-Tenent Labs. Inc., PO Box 367, West 902 Highway, Goldston, NC 27252

## Section news

The North Central Section of AOCS was slated to hold a joint meeting with the American Association of Candy Technologists' Chicago Section Sept. 10, 1987, at Nielsens Restaurant, 7330 N. Ave., Elmwood Park, Illinois.

Cocktails were scheduled for 5:30 p.m., followed by dinner at 6:30 p.m. and a technical program at 7:30 p.m. For details, contact Larry Gavin, EMI Corp., telephone 312-827-3164.

## Home at last

The American Oil Chemists' Society administrative staff moved into the society's new headquarters building in Champaign, Illinois, during August.

The new mailing address for AOCS is PO Box 3489, Champaign, IL 61821-0489, USA; the new street address is 1608 Broadmoor Drive, Champaign, IL 61821.

The society's new telex number is 493-8651.

## New members

The following persons had applied for membership in the American Oil Chemists' Society through mid-July 1987. If an applicant was invited to join AOCS by a current member, that member's name appears in parentheses at the end of the listing. The new members' listing is published bimonthly.

- David Aharony, Stuart Pharmaceuticals, Div. of ICT Americas Inc., Wilmington, Delaware  
Hassan A. Al-Kahtani, King Saud University, Riyadh, Saudi Arabia  
Patricia A. Anderson, Diversey-Wyandotte Inc., Mississauga, Ontario, Canada (Reynolds)  
Samir S. Ashrawi, Texaco Inc., Houston, Texas  
Chan A. Atchley, DNA Plant Technology Corp., Cinnaminson, New Jersey (Krishnamurthy)  
Osman Bin Atil, Palm Oil Research Institute of Malaysia, Brickendonbury (MRPRA), Hertford, England  
Martin J. Barabash, Henkel Corp., Hoboken, New Jersey  
Michel E. Bégin, Efamol Research Institute, Kentville, Nova Scotia, Canada  
Kenneth A. Berg, The PQ Corp., Lafayette Hill, Pennsylvania (Graves)  
Ira R. Berry, Pharmacaps Inc., Elizabeth, New Jersey

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## President's Club and Honor Roll

The AOCS members listed here have qualified for the 1987-88 AOCS President's Club or Honor Roll. Members who recruit at least one new member qualify for the President's Club; those recruiting three or more qualify for the Honor Roll. President's Club and Honor Roll members receive recognition at AOCS annual meetings. Forms for use in recruiting new members are available from AOCS Headquarters, PO Box 3489, Champaign, IL 61821-0489.

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<b>Six</b>	<b>One</b>	P. Kalustian
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	K.F. Carlson	E. Louis
<b>Four</b>	R.M. Catiis	B.A. Mateo
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M.D. Meiners	J.M. DeMan	G.L. Posschelle
	K.W. Dillan	M.L. Pulliam
<b>Three</b>	N. DiMarco	S. Quinn-Mullin
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	F. Gustafsson	Lasarte
<b>Two</b>	L.A. Hawkins	P. Sosis
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R.C. Hastert	C.L. Huntley	D.C. Tandy
	J.M. Iacono	K. Warner
		K. Zilch

Gamble Co., Cincinnati, Ohio (Conkerton)  
 Richard J. Cook, Kalamazoo College, Kalamazoo, Michigan (Evans)  
 Richard C. Copple, Foss Food Technology Corp., Eden Prairie, Minnesota (Berner)  
 Ned F. Cunningham, Nash-Kinema Inc., Elizabeth, Pennsylvania  
 An Q. Dang, John L. McClellan Memorial Veterans Hospital and University of Arkansas for Medical Sciences, Little Rock, Arkansas  
 Alain R. Delcourt, Lesieur-Cotelle, Ivry S/Seine, France  
 Robert C. Dinwoodie, Kraft Inc., Glenview, Illinois  
 Peter F. Doorley, Humko Chemical, Div. of Witco Corp., Memphis, Tennessee (Roman)  
 Rita M. Dougherty, USDA, Western Human Nutrition Research Center, Presidio of San Francisco, California (Iacono)  
 Edel O. Elvevoll, Institute of Fishery Technology Research, Tromsoe, Norway  
 Udo Erasmus, University of British Columbia, Vancouver, Canada  
 Michael H. Evans, Pacific Scientific Co., Silver Spring, Maryland  
 Thomas R. Fields, Tennessee Eastman Co., Kingsport, Tennessee  
 John L. Fletcher, Bristol-Myers Manufacturing, Toronto, Ontario, Canada  
 John C. Fuhr, Multitherm Corp., Colwyn, Pennsylvania (Farr)  
 Franco F.G. Griselli, Grace GmbH, Worms, West Germany (Bogdanor)  
 Sigurd Gulbrandsen, Norsk Hydro A.S., Oslo, Norway  
 Shyam K. Gupta, The Dial Corp., Scottsdale, Arizona (Bertozzi)  
 Olivia A. Guzman-Gatmaitan, University of Texas, Arlington, Texas (Min)  
 Melinda Guzman-Harty, Ross Laboratories, Columbus, Ohio (Krishnamurthy)  
 Harald S. Hansen, Biochemical Lab., Royal Danish School of Pharmacy, Copenhagen, Denmark  
 Richard V. Hardin, Oil-Dri Corp., Chicago, Illinois  
 Michael A. Hawkins, Barrow-Agee Laboratories Inc., Memphis, Tennessee (Hawkins)

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Ruth J. Blanco, Shell Development Co., Houston, Texas  
 Jean-Marie E. Bourre, INSERM, Paris, France  
 R. Stuart Braun, CSP Foods Ltd., Russell, Manitoba, Canada  
 Stanley Brechner, S. Brechner Consultant Inc., West Orange, New Jersey  
 Francisco Brivio, Cia Oleoginosa dei Peru, Lima, Peru (Posschelle)  
 Cornelius P. Broderick, South Chicago Packing Co., Chicago, Illinois  
 Diana J. Burr, Professional Service Industries Inc., Arlington, Texas  
 James C. Camp, Foss Food Technology, Douglasville, Georgia (Jacks)  
 Remigio B. Canlas, Colgate-Palmolive Philippines Inc., Manila, Philippines  
 Mario R. Carreño, Alfa-Laval Fats and Oils Division, Santiago, Chile (Carlson)  
 Guy P. Chandler, SGS Control Services, El Sobrante, California (Butler)  
 Dorselyn C. Chapital, USDA Southern Regional Research Center, New Orleans, Louisiana (Conkerton)  
 Rolando Charpentier, Inolasa-Adecsa, San Jose, Costa Rica, (D. Erickson)  
 Alka Chaudhry, USDA Northern Regional Research Center, Peoria, Illinois (Gavin)  
 Lars C. Christensen, A/S De Dansue Sukkerfabrikker, Copenhagen, Denmark  
 Myung-Sub Chung, Ohio State University, Columbus, Ohio (Min)  
 Allen D. Clauss, Procter & Gamble Co., Cincinnati, Ohio  
 Kenneth K. Cochrane, Kenco Chemical Co. Inc., Schenectady, New York  
 Jan H. Coetzee, NCP (a division of Sentrachem), Bedfordview, South Africa (Conkerton)  
 Jerome H. Collins, Procter &



- Maqdy Hefnawy, CPC International, Union, New Jersey (Meiners)
- Henry H. Hesser, Busch Inc., Virginia Beach, Virginia
- James J. Hoogasian, Worcester Memorial Hospital, Worcester, Massachusetts
- Lloyd A. Horrocks, Ohio State University, Columbus, Ohio (Holman)
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- Robert J. Howard, Pilot Chemical Co., Arlington, Texas (Marshall)
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- Thomas J. Hudson, Shaklee Corp., Haywood, California
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- Malcolm J. Kirk, Diversey Corp., Mississauga, Ontario, Canada (Quinn-Mullin)
- Barbara P. Klein, University of Illinois, Urbana, Illinois (Warner)
- Sandra Kramer, Grinsted Products Inc., Industrial Airport, Kansas (Huntley)
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- Maurice C. Lewis, Seprod Ltd., Kingston, Jamaica (Tandy)
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- John G. Monfre, CPC International Inc., Argo, Illinois
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## Methods for Nutritional Assessment of Fats

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

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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