

VOLUME LXXXIII • NO. 14

APRIL 5 - 12, 2002

BRIEFS

Goldwater Scholar

Congratulations are in order for Matthew Moake who has now officially been named a Goldwater Scholar. (*Station News, Feb. 8*) Moake is an undergraduate student at Cornell who works part



Matthew Moake

time in Dr. Randy Worobo's lab in Food Science. Moake has been researching ways for screening bacterial extracts for anticancer properties using human cancer cell lines. It has been a busy time for Moake who also received two CALS research awards: \$1500 for the Morley Student Research Grant and another \$1500 for the CALS Charitable Trust Research Grant, both of which he wrote with Dr. Worobo.

J. Zakour

Roald Hoffmann at HWS, April 17

The Geneva Chapter of Sigma Xi has the pleasure of announcing the spring lecture by Nobel laureate Roald Hoffmann. "The Logical Structure of Modern Chemistry, or, What Chemists Really Do" will be presented in the Sanford Room at Hobart William Smith at 8 pm on Wednesday, April 17.

Hoffmann's scientific specialization is the structure of the chemical bond, in particular, orbitals in extended molecular structures. They ask questions such as why are certain structures stable, why do some conduct electricity, and why are they reactive.

Hoffmann has published three volumes

(Continued on page 2)

Remembering Michael Szkolnik

Professor emeritus Michael Szkolnik 81, of 2815 Pre-Emption Road, in Geneva, died on Tuesday, March 26, at Geneva General Hospital. Szkolnik was a plant pathologist at the Experiment Station whose work on the biology and control of fungal disease of fruit trees was internationally recognized.

"Mike's work on fungicides and their physical modes of action is cited today as pioneering work that led to the development of new strategies for the application of fungicides," said Thomas Burr, chairman of the Plant Pathology Department.

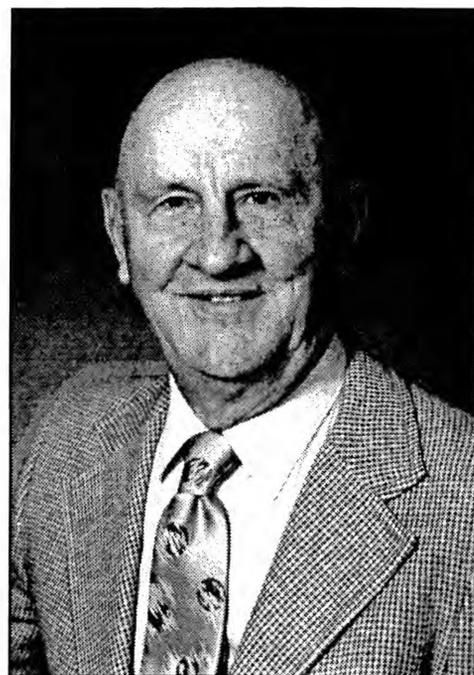
At the height of his program, Szkolnik maintained an inventory of some 3,000 potted apple, pear, peach and cherry nursery stock trees and about a thousand pots of apple and other seedlings for year-round research on the biology and control of tree fruit diseases. In particular, he focused on fire blight, cherry leaf spot, cedar-apple rust, apple varietal resistance to scab and powdery mildew, apple fruit rots in storage, pathogen resistance to fungicides, fungicide threshold levels, and the mechanics of fungicide spray control.

Szkolnik was a leader in the identification of fungicide resistance in apple scab fungus. His broad-spectrum program advanced basic knowledge in the field of plant pathology and helped fruit growers in New York and elsewhere improve and update their control of orchard disease.

"In addition to being an excellent researcher, Mike had a great desire to serve the New York fruit industry," said Burr. "In his early career he often conducted experiments in orchards in Wayne County and Western New York and was well known by growers, extension personnel and members of the chemical industry." After retirement, Szkolnik continued to visit the department to discuss research with faculty and staff and was especially interested in the ongoing research of Wolfram Köller. "Those visits will certainly be missed," said Burr.

"Mike was one of the last group of plant pathologists to be located in Hedrick Hall—before Barton Lab was built," noted former Station director, Donald Barton. "Mike was very well liked by the growers. He received a lot of commercial grants in support of his work testing new and untested fungicides in the greenhouses and laboratory."

Vegetable pathologist George Abawi remembers Szkolnik as a premier fruit pathologist and a regular speaker at growers' meetings and pesticide conferences. "Mike was a hard worker and a dedicated fruit pathologist," said Abawi. Szkolnik attended all Station functions. And, as a regular at monthly poker games, Abawi remembers, "you could never get him to back off a hand."



Michael Szkolnik

(Continued on page 2)

(BRIEFS, continued)

of poetry and several non-fiction books exploring the beauty and meaning of science. The latest is *Old Wine in New Flasks* where he and collaborator Shira Liebowitz Schmidt explore how the questions people have about the mysteries of existence are addressed differently by science and religion visit <http://hamiltonian.chem.cornell.edu/biography.html>

Hoffmann recently wrote a play *Oxygen* with Stanford's eminent Carl Djerassi that was staged in 2001—the play is one of intrigue, history and credit for scientific discovery visit <http://hamiltonian.chem.cornell.edu/roald-books/oxygen1.jpg>

Hoffmann is a scientist's scientist who is sure to give a lucid and insightful talk on what the science of chemistry is today.

Everyone is welcome to attend.

Red Cross Blood Drive Results

We fell a little short of our blood donation goal this past Monday but even so, 29 people showed up, including 1 first-timer.

A total of 25 pints was donated. Unfortunately, the Red Cross forgot an important item and had to send someone back to Rochester to get it so they were almost an hour late getting started. They apologized profusely for this error and said that they hoped that they didn't inconvenience anyone too greatly.

The next blood drive will not take place here but I hope you all will still take the time and make the effort to give at the Mega Drive that will take place at Hobart's Field House on Tuesday, June 4th.

Thank you all once again for giving of yourself.

Donna Roelofs

It's Never Too Early

Softball players, it's time to start thinking about softball. We plan to start the Station league in June.

Anybody interested in captaining their respective department's (or building's) team should contact John Zakour at jmz5@nysaes.cornell.edu. We hope to have four teams this year.

(SZKOLNIK, continued)

Szkolnik, who was born in Clifton, New Jersey, on August 23, 1920, received a B.S. in biochemistry in 1943, and a PhD. in plant pathology in 1949, both from Rutgers University. From 1943 to 1946, he served as a medical technician in the U.S. Army, where he received further training in chemistry, bacteriology, and serology. From 1949 to 1951, he worked for Experimental Plantations, Inc., a subsidiary of Merck and Company. He was appointed assistant professor at Cornell in 1951, associate professor in 1954, and full professor in 1961. He retired in 1984.

Szkolnik was a member of the American Phytopathological Society, the New York State Horticultural Society, and the New York State Academy of Sciences. He was the author of numerous scientific publications.

Szkolnik is survived by his wife of 57 years, Louise 'Eleanor'; his daughters, Linda Szkolnik of Rochester, Doris Benarab of Canandaigua and Joan Szkolnik Camp of Geneva; sons Michael (Donna) Szkolnik of Mississippi and John Szkolnik of Rochester; nine grandchildren; one great-grandchild; a brother, Alex Szkolnik, of Florida; sisters Julie Visinten of Richmond, Va., Stephanie Parmentier of Massachusetts, and Katherine Taylor of Winter Haven, Fla; and several nieces and nephews.

Memorial contributions may be made to the Geneva Free Library or to the Y.M.C.A.

Walk America

Sunday, May 5, 2002

1 PM

C'mon all you walkers and potential walkers!! Register to participate in this year's WalkAmerica!! This is the Walk that Saves Babies!



If you're interested in participating in the walk (at the lake on an especially nice day) or in giving to this cause, please contact me! I will provide you with a registration card and more information. If you have already registered for the Walk, please let me know so I can add you to my list of walkers. Thanks!

Also, did you know that if you give to the United Way through payroll deductions at work, you can designate your entire donation or a portion of it to go to the March of Dimes?

**Join the Station Team
for the Walk that counts!**

Contact Kathy DeRosa,

kad2@cornell.edu, x-2236

Detection Time for *E. Coli* in Food Reduced from Days to Minutes with New Type of Biological Sensor

The era of waiting days for *E. coli* bacteria lab results will soon be at an end for food processors and health departments. Thanks to a new type of biological sensor that, in one design, works much like a home-pregnancy test, harmful and deadly bacteria, which once took technicians days to incubate and then to implicate in food poisonings, now can be detected in minutes.

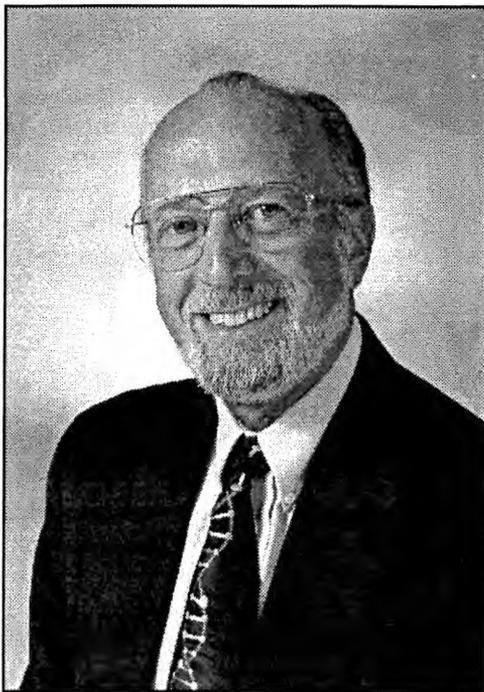
The new sensor, which employs liposomes, artificial microscopic, cell-like structures, has been developed at Cornell's Food Science and Technology department. Field tests at Cornell have rapidly detected traces of *E. coli* (*Escherichia coli*) and other food-borne pathogens.

Richard A. Durst, a professor of chemistry in FS&T at the Experiment Station, described the new sensor in a talk, "Biosensor for the Rapid Detection of *E. coli* O157:H7," at PITTCON 2002, an analytical technology conference in New Orleans on March 17. He described how the liposome sensor has been able to detect the presence of pathogens such as *E. coli*, *Cryptosporidium*, and *Listeria* in less than 10 minutes.

For years, researchers have worked on improving methods for the rapid detection of pathogens. Currently it takes days for health department technicians to examine *E. coli* because the bacteria has to be cultured to obtain amounts sufficient for testing. More recently, a process called polymerase chain reaction has reduced testing time to several hours. But, says Durst, "What was needed was a simple field-screening test for rapid and very sensitive detection of *E. coli*. In one format design, it is very similar to a visible home pregnancy test."

The basis for the rapid testing for the presence of *E. coli* are liposomes, cell-like structures made in the laboratory by adding an aqueous, marker-containing solution to a phospholipid mixture. (In medicine, liposomes are used to transport therapeutic drugs into diseased cells.) Liposomes can contain dyes, fluorescent and visible, or other detectable compounds. On the outside of these structures, the Cornell researchers have affixed antibodies, which bind to the pathogen, such as *E. coli*, for subsequent detection by rupturing the liposome membrane, releasing the dye, or other marker.

For example, if fruit juice is being tested for the presence of *E. coli*, immunoliposomes are mixed with the sample, then immunomagnetic beads containing *E. coli* antibodies capture, separate and concentrate the pathogen-liposome complex from the juice matrix. Surfactant is then added to rupture the liposomes and the fluorescence is measured with a hand-held fluorometer. In another assay format, antibody-spotted nitrocellulose test strips are placed in the solution containing *E. coli*-liposome complexes. As the liquid is drawn up the strip, it crosses the antibody-coated area and *E. coli*-



Richard A. Durst

(*E. COLI*, continued)

liposome complexes are captured in a visible spot on the strip for immediate identification.

"Because each liposome contains tens-of-thousands to perhaps millions of marker molecules, there is a large amplification effect when the liposome is ruptured and the markers are released," says Durst. "Since detection and signal amplification using liposome labels are not dependent on a secondary reaction—such as what is required for conventional enzyme-based tests—the use of liposomes has the advantage of providing immediate warning of the presence of the pathogen."

Durst has worked with several colleagues to develop this technology, and the group has patented the work. Durst's colleagues include Richard Montagna, president of Innovative Biotechnologies International, Inc., Grand Island, N. Y.; Antje J. Baeumner, Cornell assistant professor of biotechnology; and several graduate students, postdoctoral fellows and research associates.

Cornell has licensed the technology to Innovative Biotechnologies International, which has transferred the technology into field tests for *Cryptosporidium parvum*, an intestinal parasite in humans that causes diarrhea. "The beauty of the Durst technologies is that they are exquisitely sensitive and they can be used alone or in a broad array of biosensors," says Montagna.

The research was funded by the U.S. Department of Agriculture's Cooperative State Research Education and Extension Service, the Cornell Center for Biotechnology, New York State Energy Research and Development Authority, and Innovative Biotechnologies International.

B. Friedlander

Don't Forget...

**Daylight Savings
April 7.**

Spring Forward!

(Continued)

CALENDAR of EVENTS

APRIL 5 - 12, 2002

MEETINGS

CALS CHAIRS MEETING

Date: Tuesday, April 9, 2002
Time: 3 -4:30 PM
Place: 264 Roberts Hall

SEMINARS

**PLANT GENOMICS
 CANDIDATE SEMINARS**

Date: Monday, April 8, 2002
Time: 9 AM
Place: Jordan Hall Staff Room
Title: "A Genomics Approach to Understanding Abiotic Stress Signal Transduction in Arabidopsis"
Speaker: Dr. Liming Xiong, University of Arizona

Date: Thursday, April 11, 2002
Time: 9 AM
Place: Jordan Hall Staff Room
Title: "Engineering Disease Resistant Crops: Current Strategies and Future Prospects"
Speaker: Dr. Vladimir Shulaev, Concordia University, Portland, Oregon

PLANT PATH

Date: Tuesday, April 9, 2002
Time: 3:30 PM, Coffee at 3 PM
Place: Room A130, Barton Lab.
Title: "Learning to Manage New Poinsettia Disease: First Powdery Mildew, Then Scab...What Next?"
Speaker: Margery L. Daughtrey, Cornell, Riverhead, NY

LTC

Date: Friday, April 12, 2002
Time: 7 AM - 1 PM
Place: LTC
Title: Open Lab
Facilitator: Jane Irwin

FLEX tutorials available in Geneva are:
 Surfing and Searching the Web
 DreamWeaver
 DreamWeaver Beyond the Basics

(Continued)

(LTC, continued)

DreamWeaver Site Management
 Power Point
 Adobe PDF for Electronic Publishing
 Editing Images with PhotoShop

FITNESS

Aerobics

Date: Monday and Friday
Time: 12:10 - 1 PM
Place: Sawdust Cafe

Taekwondo Class

Date: Monday, April 8, 2002
Time: 12:10 - 1 PM
Place: Jordan Hall Lounge

Taekardio Class

Date: Wednesday, April 10, 2002
Time: 12:10 - 1 PM
Place: Jordan Hall Auditorium

CLASSIFIED

FOR SALE: Playstation 1, excellent condition (we upgraded to PS2). Comes with rubber grip controller, memory card, and your choice of 2 of the following games: Tony Haw'ks pro skater 2, final fantasy IX, medal of honor, driver 2. Asking \$120.00. Call C. Linn @ 2319, or cell@nysaes.cornell.edu

FOR SALE: 1994 Transport. 96,000 miles. Very clean with power steering, power brakes, passenger side power sliding door, fiberglass body, no rust. No salt Florida car, stored in a barn. Just completed full service checkup. \$6500. Contact Tim Dreyer at 607- 582-6690 or e-mail trd26@cornell.edu

BEACH HOUSE RENTAL: Beautiful location, southwest shore of Canandaigua Lake. Getaway, golf, fish, relax. Canoe and rowboat included. By the week or weekend. Suitable small family/two couples. Off-season openings (and off-season rates!) remain in June, September and October. Serious inquiries only. elg2@cornell.edu

FOR SALE: 1994 Chevy Lumina Minivan. Turquoise blue, 3.1 liter V6, 5 passenger, air conditioning, front wheel drive, power steering, power brakes ABS 4-Wheel, power door locks, air bag, tilt wheel, cruise control, AM/FW radio (cassette deck is a bit funky), no rust, 120,000 miles. Kelly blue book \$2840, asking \$2500. email Herb Cooley hjc1@cornell.edu or call 789-9159 after 6 PM.

CANOE WANTED: Looking for a good used lake canoe. Email Tyrone Hall at twh22@cornell.edu or call ext. 2367, (h)781-5352.

FOR SALE: 1989 Volvo 240 sedan. Excellent condition. \$2,500.00 or best offer. 789-8112.

UNITED WAY VIDEO SCHEDULE

Friday, April 12, 2002

8:30 8:55 am Food Science, FST Conference Room
 9:00 9:25 am Plant Pathology, PP Conference Room 1st floor
 9:30 9:55 am Buildings & Properties, B&P Break Room
 10:00 10:25 am Field Research Unit, FRU Lunch Room
 10:35 11:00 am Horticultural Sciences, Communications Services, Administration, Library, and Integrated Pest Management, Jordan Hall Staff Room

Friday, April 19, 2002

10:00 10:30 am Entomology, Ento. Conference Room - 3rd floor

Every individual who watches the United Way/Red Cross Campaign video will receive a United Driveaway Sweepstakes entry form. Picture yourself in a shiny candy apple red 2002 Chevrolet Corvette or a 2003 Cadillac CTS! The Campaign Team has arranged for one of these vehicles to be on campus April 12th.