

# STATION NEWS

# 125



NEW YORK STATE AGRICULTURAL EXPERIMENT STATION

*Celebrating the past, shaping the present, inspiring the future.*

VOLUME LXXXVIII • NO. 8

April 13 - 27, 2007



## BRIEFS

### Educators Tour Station and Tech Farm

A group of teachers, teaching assistants, and guidance counselors took a tour of the Station and the Technology Farm on March 30 as part of a workshop series offered by the Wayne-Finger Lakes BOCES Educator Professional Development Day Program. Led by Kitty Noble, Project Administrator of the Finger Lakes New Knowledge Fusion Project, the group met with a number of Station faculty and others to learn about the outreach opportunities provided by the Station to local schools. The group met with Kyle Arvin, Director of the New York State Seed Testing Lab; Olga Padilla-Zakour, Food Science & Technology; Thomas Bjorkman and Alan Lakso, Horticultural Sciences; Charlie Linn, Entomology; and Bob Seem and David Gadoury, Plant Pathology.

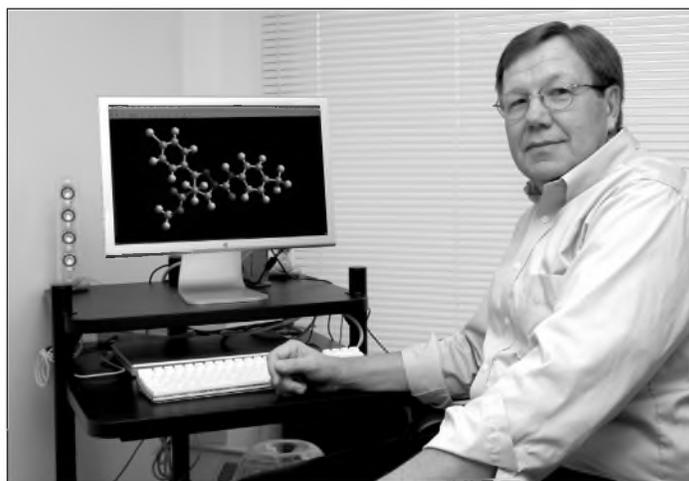
The tour provided the group with an in-depth look at academic expertise at the Station, along with an opportunity to learn about some of the exciting and practical research being conducted in the various departments that might be applicable to their own teaching pursuits. Teachers were also given career information associated with the fields of technology, food, and agriculture so that they might provide more comprehensive guidance to students in terms of career paths in these areas.

"I hope that this group walked away with a better understanding of the level of expertise and the many resources in the fields of technology, food, and agriculture here at the Station and the Technology Farm," said Kitty Noble. "I hope tours such as this will serve as starting points for further collaborations between area schools and the Geneva campus."

*(Continued on page 2)*

## Cornell Scientist Awarded Over \$2.5 Million in Grants for Toxicology Studies

The National Institute of Environmental Health Sciences (a part of NIH) has awarded two major research grants to David Soderlund, Professor of Insecticide Toxicology in the department of entomology to support research on the neurotoxic actions of insecticides. These grants, which will provide more than



*D. Soderlund*

\$2.5 million over five years, are among the largest single-investigator research grants ever awarded to Experiment Station faculty.

The two projects involve research on two chemical classes of insecticides that share a common molecular target in the nervous system, the sodium ion channel proteins of nerve membranes. Sodium channels play a critical role in the electrical signaling of nerve cells in all animal nervous systems. These ion channels are not only the targets of insecticide action but also the molecular target sites of many naturally occurring toxins—such as the 'red tide' toxins produced by marine algae—and important drugs, such as local anesthetics and some anticonvulsants.

The two insecticide research projects share a common technical approach that involves using cloned sodium channel genes to turn cultured cells into 'synthetic nerve cells.' This technique avoids the use of experimental animals as a source of nervous tissue and has the added benefit of giving researchers precise knowledge and control over the specific sodium channel proteins that they are studying. "We are extremely fortunate to have both of these projects funded at the same time," said Soderlund. "Although each project asks different research questions about a different chemical class of insecticides, the main research approaches, techniques, and tools are common to both projects. These two grants will allow us to build a larger research team to address these issues and should make both projects more productive than they would be individually."

The 'synthetic nerve cell' approach also provides the Soderlund laboratory with the means to address one of the most significant problems in toxicology, the need to extrapolate from studies with experimental organisms to manage risks to humans. A central feature of both projects involves the direct comparisons of cloned sodium channels from rats, the principal

*(Continued on page 2)*



(BRIEFS, continued)

### Help Wanted

Do you ever have the urge to do a good deed, or feel like you want to give something back to the community and humankind in general, but don't really have the time for a long term commitment - well here's your chance. The Experiment Station has committed to staff the Geneva Community Lunch Program (Catholic Charities of the Finger Lakes) each Thursday in April. A total of 8-10 volunteers are needed Thursdays from 9:00am-1:00pm to prepare and serve a hot lunch meal for those in Geneva who might otherwise go hungry. This is not only a great opportunity to help others in the community but an opportunity to connect with some of your co-workers outside of the lab or office. Kim Moyer and Gemma Osborne are coordinating this effort and are asking for your help.

On April 5th a group of nine administrative staff members from the Station volunteered and had a great time. On April 12th, another group of students and staff volunteered, and we are now looking for volunteers (this includes faculty, staff, students and retirees) for April 19th and 26th.

For non-exempt staff the requirement for this absence would be to take three hours of paid leave (vacation, personal, or comp. time, with the approval of your supervisor).

The Geneva Community Lunch Program serves any and all who come to the door. Most folks do not like to depend on free meals, but the truth is that there are many men, women and children in the area who would go hungry if the program was not in existence, and people like you and I were not there to lend a hand. If you volunteer we can promise you that you will work hard, have some fun, and learn a great deal about yourself and your fellow human beings. Do yourself and somebody else a big favor. Please email Kim Moyer at kam48@nysaes.cornell.edu or Gemma Osborne at gro2@nysaes.cornell.edu if you are willing to volunteer.

Thank you.

Kim & Gemma

(Continued on page 3)

(SODERLUND, continued)

animal model used in toxicology research, and humans. "This research is important no matter what the outcome," noted Soderlund. "If the rat and human targets are identical, we will have much more confidence in our risk assessments derived from research on rats. If the rat and human targets prove to differ in their insecticide sensitivity, this information can be used to refine and improve the risk assessments used by the Environmental Protection Agency (EPA) to set human exposure limits." Soderlund went on to say that they can also examine the specific sodium channel proteins that are expressed in the developing nervous systems of rats and humans to address directly the issue of whether there are intrinsic differences between children and adults in their sensitivity to these insecticides. "The use of cloned genes and cell expression systems provides us with access to information on insecticide action on human target proteins that is simply not available otherwise."

The two classes of insecticides under investigation in these studies not only differ in their chemical and insecticidal properties but also raise different sets of practical questions that are addressed in these research projects. One group of compounds, the synthetic pyrethroids, are one of the most important groups of insecticides; pyrethroids are used worldwide for the control of everything from household pests to disease-bearing mosquitoes to serious pests of agricultural crops. The EPA is mandated under the Food Quality Protection Act of 1996 to re-register all pesticides under new standards, which include an assessment of the possible additive effects of chemicals considered to have a 'common mechanism of toxicity.' Previous research on pyrethroids from the Soderlund laboratory has already been included in information provided to EPA as part of the scientific basis for determining common mechanisms for pyrethroids. One of the two new grants will support the extension and expansion of this work, contributing key information to inform the re-registration of these compounds.

The second class of insecticides, which are termed 'pyrazoline-type' compounds, raise a separate set of practical issues. These are recently developed insecticides, with only one compound in widespread use and others in late stages of development by agricultural companies. Previous research in the Soderlund laboratory and elsewhere has shown that the site of action of pyrazoline-type insecticides on the sodium channel protein is different than that for pyrethroids but appears to overlap the site of action of local anesthetics and other drugs. "There appears to be a unique convergence of discovery research for drugs and insecticides at a single site on the sodium channel protein," said Soderlund. "Part of our research is directed at understanding the differences between the actions of drugs and insecticides at this site."

"Landing two large grants from NIH in the presence of increased competition nationwide and lower funding rates is huge," said Wendell Roelofs, chairman of the department of entomology. "It is a great testimony to the world-class program that Dr. Soderlund has built up over the decades on studying the mode of action of insecticides and developing novel methods of assessing their toxicity."

*The Station  
community extends its sincere  
condolences to the family of  
Don Grosier,  
coworker and friend, who died on  
April 2. Don worked at the  
Station for 35 years and is  
remembered for his  
hard work,  
kindness and  
sense of humor.*



## Dr. Christopher K. Lam to Lead the IR-4 Analytical Laboratory at Geneva

**D**r. Christopher K. Lam joined the staff of the Northeast Regional IR-4 Program at the Experiment Station on April 1, 2007. Dr. Lam has been appointed a Senior Research Associate in the Department of Food Science and Technology, where he will serve as the Regional Laboratory Coordinator and Laboratory Research Director.

Dr. Lam received his Ph.D. in analytical chemistry from Baylor University, Waco, TX in 1992 and has worked since 1994 in the agrichemical industry in the areas of pesticide metabolism and residue analysis. His most recent position was that of Senior Scientist in Residue Chemistry at Bayer Corporation's Agriculture Division in Stillwell, KS.



C. Lam

The IR-4 Project is a unique partnership of the United States Department of Agriculture, land grant universities and growers directed toward "filling the toolbox" with pest management tools for specialty crops. As part of this project, the Northeast IR-4 Program manages field trials of candidate pest control agents throughout the northeast region and performs analyses of pesticide residues. The data from these studies, combined with data obtained concurrently by three other regional laboratories and by cooperating Agricultural Research Service laboratories, is employed as the basis for petitions from the IR-4 Program to the U.S. Environmental Protection Agency (EPA) for new registered uses of pest control agents on specialty crops.

"The Northeast Regional IR-4 Program is fortunate to have someone with Dr. Lam's expertise and experience to take over the leadership of the analytical laboratory," said Dave Soderlund, Director of the Northeast Regional IR-4 Program. "Chris's background in the agrichemical industry, and particularly his extensive experience in performing analytical studies in support of pesticide registration petitions, fits perfectly with the needs and mission of the IR-4 Program."



The Frank A. Lee Library, in conjunction with the New York State Agricultural Experiment Station's 125th Anniversary Celebration presents:

## Hudson Cattell, Covering the Eastern Wine Beat

How Hudson became fascinated with wine and will share his reminiscences of Philip Wagner, Konstantin Frank, the Vineland Station and the Geneva Experiment Station.

Tuesday, April 17, 2007  
1 PM in the  
Jordan Hall Lounge

*Journalist and photographer Hudson Cattell has been chronicling the progress of the Eastern wine industry for many years. He currently is co-editor of Wine East magazine. Hudson has written many articles on the history of wine and grapes in the Eastern United States. He is co-author of Wine East of the Rockies and has contributed to many works on this subject.*



### Be a Hero!

When you join March of Dimes WalkAmerica, you give babies born prematurely a fighting chance. Unready to meet the world, many of these babies struggle just to survive. The funds you raise (or give) support lifesaving research and innovative programs.

This year the March of Dimes WalkAmerica will be held on Sunday, May 6, registration at noon, and the Walk begins at 1PM at the Seneca Lake State Park.

If you're interested in participating in the walk or in giving to this cause, please contact Kathy DeRosa. Kathy will provide you with a registration card and more information, or you can register on-line at [www.walkamerica.org](http://www.walkamerica.org), under the Geneva Experiment Station team name. Those of you who have participated in previous Walks should have received registration material at home. Please be sure to indicate you are on the Geneva Experiment Station team. Please let Kathy know if you plan to walk this year so she can include you on the Station list of participants and e-mail list so she can send you Walk info.

You can also help the Station Team attain our \$500 goal by selling or buying Niagara chocolate bars. If you're interested in buying or selling them, please contact Kathy. They are easy to sell--they sell themselves! Contact Kathy at x2263 or kad2.



**CALENDAR of EVENTS**  
APRIL 13 - 27, 2007

**MEETINGS**

**CHAIRS' & UNIT LEADERS'**

**Date:** Thursday, April 19, 2007  
**Time:** 1:30 PM  
**Place:** Jordan Hall Staff Room

**CHAIRS' MEETING**

**Date:** Tuesday, April 24, 2007  
**Time:** 9:30 AM  
**Place:** Director's Office

**SEMINARS**

**ENTOMOLOGY**

**Ping Wang**

**Dept. of Entomology**

**Cornell University, Geneva, NY**

"What is the molecular genetic basis of Bt-resistance in field insect populations?"

**Date:** Tuesday, April 17, 2007  
**Time:** 10:30 AM (10:00 PM coffee)  
**Place:** 310 Barton Lab, Chapman Conference Room

**PLANT PATH**

**Mary Ruth McDonald**  
**University of Guelph**

**Guelph, Ontario Canada**

"Progress in the management of the major diseases of muck vegetables in Ontario"

**Date:** Tuesday, April 24, 2007  
**Time:** 3:30 PM (3:00 PM coffee)  
**Place:** A134 Barton Lab

**FOOD SCIENCE**

**Paul E. Brock, II**

**Cornell University, Geneva**

"Sun Exposure of Cabernet Franc Grapes and Its Effects on Grape and Wine Composition"

**Date:** Tuesday, April 18, 2007  
**Time:** 11 AM  
**Place:** Room 251, Food Research Lab

**SPECIAL SEMINAR**

**Plant Pathology**

**Gilmer Award and Lecture**

**Date:** Friday, May 4, 2007  
**Time:** 1:30 PM  
**Place:** A134 Barton Lab  
**Speaker:** Dr. Frances Trail, Michigan State University

**Title:** "Weaving a life story: Studies on the disease cycle of Fusarium graminearum on wheat"

**ENGLISH AS A SECOND LANGUAGE**

Classes are free and include conversational English, writing skills and real-life communications.

**Instructor:** Mary Spittler  
**When:** Every Tuesday from 5-8 PM, & every Thursday from 3-6 PM.  
**Where:** The Food Science and Technology Building Lunch Room.

New students are welcome to join at any time. Just show up for any session. Classes are flexible so that students may attend either or both sessions each week.

**RETIREE NEWS**

**ATTENTION: STATION RETIREES**

If you have changed your address or if you are not receiving mailings about Retiree's activities, and would like to be on the mailing list, please call Sue Dwyer at 315-781-0360.

**SAGES Clothing Drive**

**Thursday, April 26, 2007**

**Barton Lab Parking Lot**

**9:00 AM TO 1:00 PM**

Here's a great opportunity to put items you no longer use to good use. SAGES will be holding a clothing drive to benefit the American Cancer Society. With the aid of St. Pauly, we will be collecting usable clothing, shoes, sneakers, belts, purses, linen (towels & sheets), blankets, and drapes (please no rags or fabric scraps). Please place all articles in plastic bags. St. Pauly distributes these donations to people that can use them, here in the U.S. and in Third World countries. Within this past year almost 20 million garments have been distributed to over 3 1/3 million people all over the world. The clothing collected is never shredded. All donations will be given to the American Cancer Society. If you have any questions, or would like to donate but won't be around on the 26th, please email Maryann Borsick Herman at mab225. Thanks for your help.

**—AUCTION—**

**Cornell Police Lost & Found**

**Spring Auction**

**Tuesday, April 17, 2007**

**Preview 11AM-noon**

**Auction starts at noon Barton Hall**

Bid on unclaimed calculators, cell phones, watches, jewelry, backpacks, music devices, a mailbox, approximately 16 bicycles, and more. For more information, call 255-7197 or e-mail: lostandfound@cornell.edu.

**CLASSIFIEDS**

**FOR SALE:** 2003 Classic Spa. 5 person, 280 gallons, 31 total jets. Under warranty until 4/8/08. \$4900 new, asking \$1900. Call x2251 or 781-2169 after 6PM

**FOR SALE:** Electric cement mixer with stand. Belle model mini 150, less than 20 hours of operation, never seen cement, includes custom made cover. Asking \$300. Contact John at x2291 or jjc2

**FOR SALE:** JOHN DEERE—Spin-Steer Lawn Tractor. SST18 2002, one owner, new \$4000.18 HP Briggs & Stratton V-Twin 48 inch mower deck, zero turn, new battery. All maintenance done by John Deere, 162 hours. Asking \$2000. Contact Michele Kaufman 315-781-2489 or mrk25

**FOR SALE:** 2005 19' Tracker Tahoe. V6, 190hp, seats 7, open bow. Asking \$14,500. Contact wns1 or 585-261-5023.

**FOR SALE:** Wicker Love seat and two chairs w/ cushions. Nearly new. The furniture is very well constructed. The furniture is a nice country green, but can be painted any color, \$225. Contact Cheryl Ten Eyck at cnt1 or X2379.

**PEDOMETERS FOR SALE**

Anyone who would like to purchase a pedometer (with the Cornell emblem), please contact Kathy DeRosa at x2236 or kad2. Cost for first-time buyer is \$2; if you're a return customer the cost is \$10.

**Save The Date**  
Join us at our  
**125th Anniversary**  
**Open House**  
**September 15, 2007**



College of Agricultural and Life Sciences  
Cornell University