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College of Agriculture and Natural Resources

Connecticut's Comprehensive Public Land Grant and Sea Grant University

Journal

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Ratcliffe Hicks School of Agriculture
Storrs Agricultural Experiment Station • Connecticut Cooperative Extension System
www.canr.uconn.edu



University of Connecticut

Agricultural Biotechnology

This is the fourth in our series of articles on agricultural biotechnology. Dr. Geary is a professor in the Department of Pathobiology and Veterinary Science and Director of the Center of Excellence for Vaccine Research. To learn more about the center, visit it on the Web at <http://cevr.uconn.edu>.

Vaccines: Mediators of immune protection

By Steven J. Geary
Professor of Pathobiology and Veterinary Science
Director, Center of Excellence for Vaccine Research

Pathogenic (disease-causing) bacteria and viruses are now, and will continue to be, the most significant cause of animal disease and economic loss. Over the last four decades a great number of the "easy" pathogenic microbes have been effectively controlled, leaving the "difficult," intractable ones to be resolved. The most cost-effective intervention for the prevention of disease and death from these pathogens is the use of vaccines to induce protective immunity.

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Scientists studies relationship between plant form and insect predators

By Kim Colavito Markesich

Ana Legrand, assistant professor in residence in the Department of Plant Science, feels fortunate in being able to combine her interests in agriculture and biology in her entomology research.

Since her postgraduate work at the University of Maryland, Legrand's research has focused on biological control of plant insects, particularly the effects of morphology, or form and structure, on natural plant pest control.

In a laboratory study funded by the UConn Research Foundation, Legrand examined how different characteristics of pea plant leaves influence the effectiveness of insect

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Photo by Winston Trollope

This black rhinoceros is one of a few reintroduced to the Great Fish River Game Reserve in South Africa. Local residents named him Boris.

Students travel to South Africa to study ecology

By Kim Colavito Markesich

Sixteen students will have the adventure of a lifetime as they participate in a new course, Introduction to African Ecology and Renewable Resources Management, taught in collaboration with the University of Fort Hare (UFH) on the Eastern Cape of South Africa.

The students will spend three weeks during May and June in South Africa studying alongside UFH students under the direction of UFH instructors in several fields, including wildlife management, grassland management, ecology, and environmental ethics. The course will be taught at a new field station in the 100,000-acre Great Fish River Game Reserve.

The course is made possible through the

UConn-African National Congress Partnership, which was created in 1999 to link UConn and the University of Fort Hare. The ANC was founded in 1911 by the first national party to envision a world in which all people are treated equally. The linkage is funded by the United Negro College Fund.

Morty Ortega, assistant professor in the Department of Natural Resources Management and Engineering, and Elizabeth Jockusch, assistant professor of ecology and evolutionary biology in the College of Liberal Arts and Sciences, will accompany the students to Africa and will meet with them weekly before the trip to help them prepare. Students were selected for the course based on applications they submitted and will be required to complete a field research project.

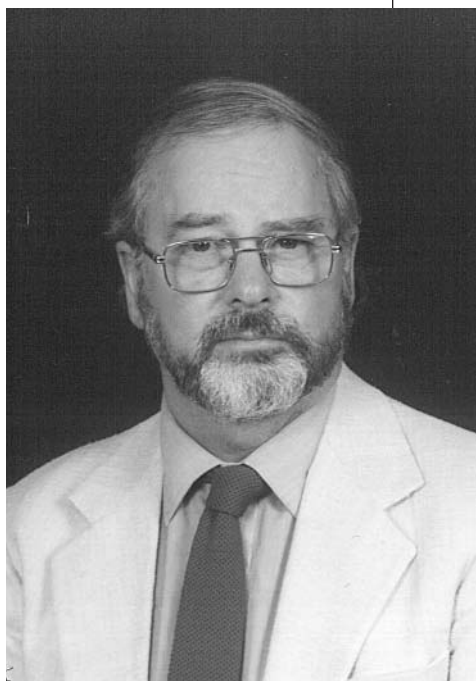
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A message from . . .



Derek Allinson
Acting Associate Dean for
Academic Programs and Director
of the Ratcliffe Hicks School of
Agriculture

Let us know
what you're thinking.
Email sputnam@canr.uconn.edu

Dear Readers:

During the past few months several events have transpired that reflect well on the College and School. First, two faculty members have received major teaching awards. In November 2001, Richard Clark, professor of nutritional sciences, was a recipient in the National Awards Program for Excellence in College and University Teaching in the Food and Agricultural Sciences. This program, recognizing outstanding teachers across the entire country, is organized and supported by the United States Department of Agriculture. Prof. Clark has also received two grants to support his innovative pedagogy; the first is a USDA Higher Education Challenge Grant, Web-Based Nutritional Assessment Laboratory, and the second is a Connecticut Department of Higher Education grant, Critical Thinking in Nutrition and Health Sciences. Professor John Alexopoulos received the University of Connecticut Agriculture and Natural Resources Alumni Association Award for Excellence in Teaching. Prof. Alexopoulos has been teaching landscape architecture in the Department of Plant Science since 1977. Throughout this 25-five year period, he has carried a heavy teaching load and advised many students. He has played a central role in the landscape architecture program and, in particular, obtaining national accreditation from the American Society of Landscape Architects.

Two departments, Animal Science and Natural Resources Management and Engineering, underwent combined University of Connecticut and USDA Cooperative State Research, Education, and Extension Service (CSREES) onsite program reviews during the fall semester. While the review teams made suggestions for us to consider, both reviews were successful. The Department of Nutritional Sciences has received a \$276,000 grant from CSREES that will support doctoral fellows in the department in a program called An Integrated Approach to Nutrition Across the Life Span.

In the Ratcliffe Hicks School of Agriculture, several courses are either being tried for the first time or are underway as newly established courses. In the former category are courses in wildlife management and conservation of natural resources. In the latter category are a number of courses in turfgrass science. The turfgrass science program is new and we have been very fortunate to have the program strengthened by gifts of several pieces of turf equipment.

Finally, under the leadership of Vice Provost Suman Singha and Ms. Patricia J. Jepson, the College of Agriculture and Natural Resources has established an articulation agreement with Northwestern Connecticut Community College (NCCC). The veterinary technology program at NCCC is a two-year associate degree program, fully accredited by the American Veterinary Medical Association. This agreement will facilitate transfer of graduates of the vet

tech program who choose to pursue a baccalaureate degree in animal science or pathobiology at the University of Connecticut. Recommended course sequences and transfer equivalencies cover many general education requirements and prerequisites. NCCC students will be able to enroll in animal science and pathobiology and veterinary science courses during their first semester here, allowing them to complete graduation requirements in a timely manner.

Clearly, both the College and School continue to move forward, supporting the educational needs of our present students as well as those contemplating matriculating into our programs.

Sincerely,

Derek Allinson
Acting Associate Dean for Academic Programs
Acting Director, Ratcliffe Hicks School of Agriculture

College of Agriculture and Natural Resources

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New program teaches nonagricultural IPM

By Kim Colavito Markesich

In less than a year's time, the new nonagricultural Integrated Pest Management Education program has received more enthusiastic attention and support than Richard Ashley could ever have imagined. Funded with a \$100,000 grant from the Bingham Trust, the new program is designed to teach the principles of IPM to the non-farming community.

The IPM program has several parts. For adults, the IPM Web site (www.hort.uconn.edu/ipm/ipmprog.htm) offers a wide array of online courses and articles. Judging from past usage, the site should receive some 300,000 hits this year. The program team is assembling a series of publications, including the IPM turfgrass, pepper, sweet corn, and cole crop manuals and materials on invasive plants, that will be placed in all Connecticut public libraries.

But the key to the new program is its curriculum for public schools. Ashley, acting department head, professor of plant science, and IPM coordinator, believes that through IPM education, children will become aware that their actions can alter their environment.

Ashley assembled a team to develop the curriculum, which, like any new curriculum must adhere to state and federal guidelines for teaching science. He hired two consultants, Dale Schimmel, a curriculum coordinator, and David Harding, a former science teacher recently named principal of Hall Middle School in Willington. Donna Ellis is the IPM extension educator. The team's approach is to present IPM information as an illustration of science applied to a real situation.

The curriculum is packaged as a kit and includes background information for the teacher as well as all the necessary supplies, from lab kits to visual materials, to teach each unit. The units take anywhere from one to ten class periods, depending on how much time the teacher wishes to devote to the subject. Each unit includes eight activities to bring fun and creativity to the learning process, and in some cases, integrates other subjects such as writing.

For instance, to learn about insects, students study their life cycle and feeding behavior. For one activity, students develop a brochure designed to attract a particular insect to the insect family's chosen vacation retreat, and in the process learn all about that insect.

Ashley hopes to pilot the program this school year in five or six classrooms, analyze feedback, and make the final product available for the 2002-2003 school year. Ashley has received several requests for the materials. He says, "The units are so clever and thorough that there has been a lot of interest even though nothing official has gone out."

4-H is interested in adapting some of the activities for its programs. And, when the local vocational agriculture teachers heard about the project, they asked about having the program reworked with agricultural examples for use in their teaching modules.

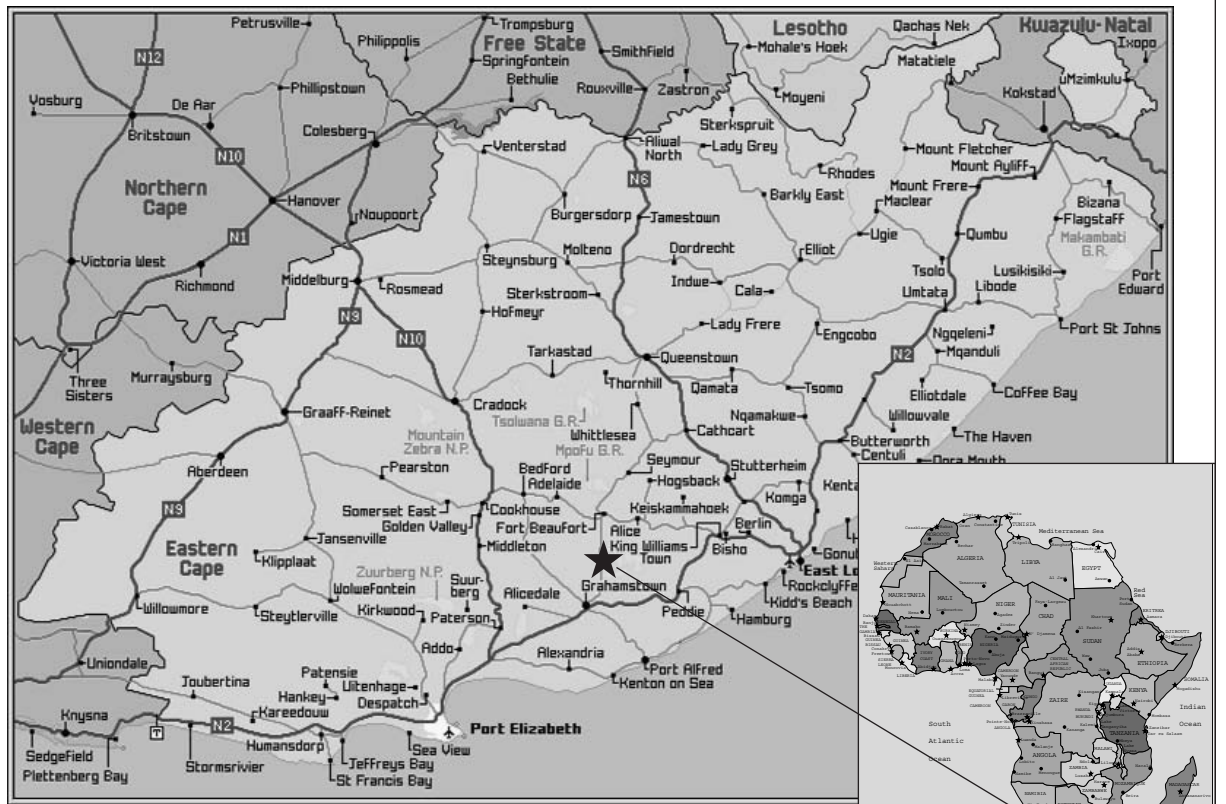
The Bingham Trustees are very pleased with the progress. They have asked for a written proposal to continue the program at \$100,000 a year for the next five years.

Ashley would like to see two grade level units in development, two in pilot program, and two in use for each of the next five years, with the goal of creating an ongoing program for grades K through 12.

"I think there's a tremendous need for education out there. People are looking for ways to help the environment," Ashley says.

"I have found this to be an immensely exciting opportunity and am thrilled that the Bingham Trustees have enough faith in us that they're willing to consider funding for a five-year period. That lets us do so many more things than we can do with an annual budget."

Students travel to South Africa to study ecology



This map shows the location of the Great Fish River Game Reserve.

(continued from page 1)

Being in the field is exciting because I never know exactly what I will encounter," says Jockusch. "This course will give students an opportunity to spend a lot of time outdoors observing what goes on in the natural world. We hope they will all get to experience the thrill of making discoveries while also learning about ecology, evolution, and conservation."

Danielle Goodman is enrolled in the course. She says, "I think that this is going to be a great class. Learning with students from another culture, and from professors of a different culture, should be exciting and interesting. Seeing the wildlife in its natural habitat is especially exciting since these are the animals I want to work with. I have spent two summers working with exotic animals in captivity. I can't wait to see them in the wild."

Ortega says, "Any student that has the chance to go overseas should do so. They'll see a completely different ecosystem but at the same time a completely different culture system. Many UConn students have never gone out of New England. It will help the students to grow enormously."

Kaye Brathwaite is looking forward to the trip. "Although I am a natural resources major, and the purpose of this trip is to get involved in some form of research that deals with the environmental state of the land, I feel I will be more affected by the people. Learning about what the land means to them, their practices ... the way of life that for the most part involves a coexistence with the land apart from it just being a provider of shelter or food."

Jennifer Gilbert, a graduate student

in natural resources management and engineering, spent a semester in London as an undergraduate and studied in Chile as part of a course taught by Ortega. She offers her thoughts on studying abroad. "Picking up and going to a new place inspires a sense of curiosity in me," she says. "I want to learn everything about my new surroundings. I need to find a way to inspire that curiosity and motivation, to constantly look at the world around me with fresh eyes every day ... That is one of the most important things that foreign travel can bring to my studies, career, and life."

Nancy Bull, the College's associate dean for outreach and public service, is excited about the opportunity for students and for the College as a whole. "Dr. Ortega's course is the first of its kind for the UConn partnership with the University of Fort Hare. While faculty and administrators have visited Fort Hare, this course represents the first collaborative course in the partnership."

She continues, "The success of the course will solidify the relationship and open the door for other

(continued on page 5)



Lodge at the Great Fish River Game Reserve where students will stay.

Recent Grants

Andrew, S. Effect of Increased Rumen-Undegradable Protein on Milk Protein Content-Cows. Walker Fdn., \$294, 1/1/00-12/31/01 supplement

Ashley, R. IR-4 Liaison. Cornell U., \$1,500, 8/15/99-8/15/01 supplement

Bartholomew, C. New England Pest Management Information Network. U. Maine, \$8,642, 1/1/01-12/31/01

Bender, N., Altobello, M. Crop Insurance Education & Information for CT Agricultural Producers. CT-DOA, \$150,000, 6/1/01-9/30/02

Berkowitz, G. Gerald Berkowitz Intergovernmental Personnel Act Assignment. NSF, \$173,638, 9/17/01-9/16/02

Berkowitz, G. Plant Cyclic Nucleotide Gated Ion Channels; Structure:Function Analysis. NSF, \$13,156, 3/15/01-2/28/02 supplement

Berkowitz, G., Gaxiola, R., Li, Y. Improving Salt Tolerance of Winter Wheat. USDA, \$5,000, 8/30/01-8/29/02

Berkowitz, G. Calmodulin, Ca & cAMP Gated Ions Channels. USDA-NRI, \$130,000, 9/1/01-8/31/03

Bridgen, M. Breeding & Development of New Flowering Bulb Species from Chile. American Floral Endowment, \$12,500, 7/1/01-6/30/02

Bridgen, M. Breeding & Production of New Cut Flower Crop Leucocoryne. Gloeckner Fdn., \$12,500, 8/1/00-7/31/02 supplement

Broderick, S., Altshul, M. A Grant Request to the Norcross Wildlife Foundation. Norcross Wildlife Fdn., \$11,600, 12/4/01-12/3/02

Broderick, S. Cooperative Agreement Between QSHC, Inc. & UCONN. Quinebaug-Shetucket Heritage Corridor, Inc., \$83,034, 10/1/01-9/30/04

Broderick, S., Westa, S., Westa, M., Civco, D. Cooperative Agreement Between QSHC & UConn. Quinebaug-Shetucket Heritage Corridor, \$214,650, 2/1/01-12/31/03 supplement

Civco, D. Creation of an Earth Grant Geospatial Technology Extension Program. NASA-Goddard, \$25,000, 9/1/01-8/31/04

Civco, D. UCONN Campus Director - CT Space Grant College Consortium. U. Hartford CT Space Grant College Consortium, \$3,100, 3/1/01-2/28/02

Clausen, J. Jordan Cove Urban Watershed. CT-DEP, \$156,614, 7/1/01-6/30/02, ERI

Clausen, J., Filchak, K. Branford River Urban Water Quality Project. CT-DEP, \$12,000, 6/27/01-3/31/02

Cotterill, R. Food Marketing Policy Center for Research. USDA-CSREES, \$462,009, 8/1/01-7/31/04

DeGuise, S. Comparative In Vitro Immunotoxicology of Organochlorine Mixtures. EPA, \$666,649, 10/1/01-9/30/04

DeGuise, S. Immune Response of Cetacean-reconstituted Scid Mice to Morbillivirus Inf. Morris Anima, \$15,000, 4/1/99-3/31/02 supplement

Drake, L., Bender, N. UCONN FNP: Food Security Project. USDA-DSS, \$113,952, 10/1/01-9/30/02

Dzurec, D. Survey of Food Processing & Business Needs of CT Food Industry. UCRE, \$6,248, 10/1/01-9/30/02

Elliott, G., von Bodman, S., Elmer, W. Effective Use of Microbial Inoculants for Suppression of Soilborne Pathogens. American Floral Endowment, \$24,429, 8/23/02-8/22/03

Ellis, D. Amendment to Cooperative Agreement Award for CAPS (Giant Salvinia) FY 01. USDA-APHIS, \$7,000, 10/1/00-9/30/01 supplement

Ellis, D. Cooperative Agreement Award for Biological Control of Purple Loosestrife FY01. USDA-APHIS, \$8,500, 6/29/01-6/28/02

Ellis, D., Schroeder, D. Cooperative Agreement Award for CAPS FY 2002. USDA-APHIS-PPQ, \$19,484, 10/1/01-9/30/02

Ellis, D. Biological Control Site Monitoring for Invasive Species in CT R. Wtrshd. USDI, \$4,000, 5/8/00-6/30/02 supplement

Faustman, C. Quality & Safety Assessment of Commercially Produced Tasteless Smoked Seafood Products. S-K Grant Prog/NMFS&NOAA, \$40,788

Faustman, C. Efficacy of Producing Stable W-3 Fatty Acid-Enhanced Foods to Improve Human Health. USDA-IFAFA-UMASS, \$250,346, 10/1/01-9/30/05

Fernandez, M. Eggs as Part of a Healthy Diet in Mexican Children. American Egg Bd/Egg Nutr. Ctr., \$49,689, 2/1/02-1/31/03

Fernandez, M. Effects of Seeds of Plantago ovata on Lipoprotein Metabolism in Guinea Pigs. Universidad de Sonora, \$4,600, 8/1/01-12/31/01

Fernandez, M. Long Term Effects of Walnut Supplementation on Body Weight & Diet Patterns. Walnut Growers-Loma Linda U., \$15,000, 9/1/01-8/30/02

Ferris, A. Early Childhood Anemia: Utility of Psychological Support & Preventive Screening. UCRE, \$19,302, 6/1/01-5/31/02

Ferris, A., Lammi-Keefe, C. UCONN FNP: Administration. USDA-DSS, \$91,544, 10/1/01-9/30/02

Ferris, A. UCONN FNP: Husky Nutrition Project. USDA-DSS, \$527,737, 10/1/01-9/30/02

Ferris, A. UCONN FNP: Core Project. USDA-DSS, \$117,363, 10/1/01-9/30/02

Ferris, A. PSA URI SNAP Project. USDA-DSS-FNP-URI, \$64,788, 12/17/01-9/30/02

Foltz, J. Analyzing University Agricultural Biotechnology Patenting. UCRE, \$1,000, 11/1/01-8/31/02

Freake, H. Assessment of Protein Binding Capacity of Nylon Membranes. CUNO, Inc., \$5,720, 7/1/00-9/30/02 supplement

Freake, H., Fleet, J. FASEB Summer Research Conference. NIH, \$30,800, 7/1/01-12/31/01

Freake, H., Fleet, J. FASEB Summer Research Conference. USDA, \$10,000 7/1/01-12/31/01

French, R., DeGuise, S., Frasca, S. Assessment of Cause(s) & Extent of Morbidity & Mortality of American Lobsters in LIS. EPA-LIS, \$97,546, 10/1/00-9/30/02 supplement

French, R. Research Support Agmt - US Plum Island Disease Center. USDA, \$23,518, 10/1/01-12/31/01

Garmendia, A. Polarization of Th1/Th2 Immunity in Swine via Delivery of Cytokines in Conjunction with PRRSV DNA Vaccine. USDA-NRI, \$240,000, 12/15/01-12/31/04

Gaudio, M. Asthma Education Project. CT-DPH, \$8,944, 9/1/01-1/31/02

Gaudio, M. Statewide Lead Safe Training. DPH, \$59,800 11/1/00-12/31/02 supplement, ERI

Gaxiola, R. Engineering Salt and Drought Tolerant Plants. USDA, \$145,000, 9/1/01-8/31/03

Giannotti, L., Arnold, C. NEMO Projects: Regional & Watershed Programs Year 4. CT-DEP 319 Program, \$100,000, 5/23/01-12/31/03

Giannotti, L. NEMO: Reducing Impacts from. EPA, \$25,000, 10/1/02-12/30/02

Gray, P., Eller, C. After School Grant Program. Windham Public Schools, \$63,218, 7/1/96-6/30/02 supplement

Gray, S. Provision of Nutrition Services to Families of Children w/Phenylketonuria & Other Metabolic Disorders. UCONN Health Center, \$31,812 7/1/01-6/30/02

Gray, S. UCONN FNP: Children with Special Dietary Needs. USDA-DSS, \$12,473, 10/1/01-9/30/02

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Vaccines: Mediators of immune protection

(continued from page 1)

So what is a vaccine? Simply put, it is material originating from a microorganism that stimulates immune resistance to disease caused by that organism. The term "vaccinate" means to inoculate with any vaccine in order to secure immunity against the corresponding disease.

The ideal vaccine should:

- Promote resistance to disease.
- Stimulate long-lived immunity.
- Remain stable at room temperature for a prolonged period of time.
- Be safe, eliciting minimal/acceptable side effects.
- Be inexpensive.

The efficiency of any vaccine is also influenced by the addition of an adjuvant (any material that increases the immune response to a given antigen without being related to that antigen) as well as the route of administration.

The field of vaccinology has advanced tremendously, due in large part to rapid and continued developments in molecular technologies. To help the reader better appreciate this, I will recapitulate the categories of vaccines ranging from the simplest traditional forms to the sophisticated new generation formulations that are still in development in research laboratories throughout the world.

Whole-cell inactivated vaccines

In this traditional form, entire pathogenic microorganisms are inactivated by heat or chemical methods to insure that they are not capable of replication in the vaccinated animal while retaining their ability to induce a protective immune response. The primary advantage to this form of vaccine is that it does not require prior definition of the molecule(s) that cause this microorganism to be pathogenic since the entire microorganism is included in the vaccine preparation. They are safe, simple, and generally inexpensive to produce. They have been referred to as "kill it and fill it" vaccines.

Attenuated (bacterial or viral) vaccines

In this category of vaccine the pathogenic microorganisms have been modified to diminish or eliminate the ability to cause disease (attenuated) while retaining the ability to replicate and induce protective immunity. The advantages to this type of vaccine over the inactivated forms are that they may elicit broader immune responses, require fewer doses, and generally induce longer-lasting protection.

Subunit vaccines

These vaccines are made from purified proteins or polysaccharides derived from bacteria or viruses. They include such components as toxins and cell surface molecules involved in attachment or invasion of the pathogen to the host cell. Subunit molecules from two or more pathogens are often mixed together to form combination vaccines. The advantages to combination vaccines is that they are generally less expensive, require fewer inoculations, and, therefore, are less traumatic to the animal.

Recent advances in science now offer new and unprecedented opportunities for the development of new vaccines. The approaches for developing a new generation of vaccines are based on molecular biology technologies.

Refined recombinant DNA technologies

permit the cloning of genes that code for protective antigens and their production in organisms such as yeast or bacteria that are safe and inexpensive to grow. These recombinant microorganisms can be viewed as tiny biological factories producing large quantities of defined antigens that may then be further purified and used as subunit vaccines. This recombinant technology has expanded and is now being used in conjunction with live attenuated microorganisms for the development of novel delivery systems. Live attenuated vectors such as Vaccinia virus or *Salmonella typhimurium* are being used as vehicles for the safe delivery of recombinant DNA that codes for defined antigens that have been demonstrated to elicit protective immune responses. The purpose of these vectors is to present and maintain the antigen in the appropriate tissue site, allowing for prolonged immune stimulation, thereby inducing a strong and protective response. Another offshoot of this technology is the so-called "edible vaccines," where the genes are cloned into plants. In this scenario the plants are used to produce the cloned antigen and the animal is vaccinated by eating the plant.

Vaccines are now being developed that are composed of synthetic peptides. These vaccines are linear strings of amino acids linked together synthetically to construct short proteins (peptides). These peptides mimic the natural antigens, which have been shown to be capable of inducing protective immune responses. The advantages over traditional vaccines are that they are safe and can be synthesized with high reproducibility and purity in large quantities.

DNA vaccine technology is an area that has received much attention and holds a great deal of promise. This approach was first described in 1992 and was referred to as "genetic immunization," which is probably a more appropriate term since, theoretically, the immune response being produced is not to the DNA but to the antigen it codes for. This involves the injection of DNA that codes for antigens into the muscle tissue of an animal by needle and syringe or via a "gene gun," resulting in sustained expression of the antigens and the generation of protective immunity. There are several advantages to DNA vaccines over traditional vaccines. They are easy to construct, safe, and are stable at higher temperatures. This makes them desirable for use in developing countries where refrigeration may not be available.

The Center of Excellence for Vaccine Research (CEVR) is actively engaged in several of these areas of new generation vaccine research, including recombinant DNA, attenuated vectors, synthetic peptides, and edible vaccines. Definition of the mechanisms of action of the pathogens is a crucial first step and the greatest challenge for the successful development of these vaccines, and is therefore a large part of the research programs in CEVR.

Biotechnology terms

Antigen: a substance that causes the formation of an antibody or elicits a cellular response.

Pathogen: any virus, microorganism, or other substance that causes disease.

Recombinant DNA technology: any of the various techniques for separating and recombining segments of DNA or genes.

Vector: any DNA molecule that can incorporate foreign DNA and transfer it from one organism to another.

Definitions from the Academic Press Dictionary of Science and Technology

Recent Grants

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- Himmelstein, F. Corn Herbicide Use: Reducing Risks Associated with Field Corn Herbicide. US-EPA, \$30,000, 10/1/01-9/30/03
- Hirsch, D., Venkitanarayanan, K. Development, Testing & Implementation of HACCP Models for Farmstead Cheese in New England. USDA, \$231,863, 9/15/01-9/30/03
- Lammi-Keefe, C. Pregnancy with Diabetes: Infant Neurobehavior. Donaghy Foundation, \$1,912, 1/1/99-1/7/02 supplement, interest income
- Lammi-Keefe, C., Thoman, E. Can DHA-Functional Food in Pregnancy Enhance Infant Neurobehavioral Development? USDA, \$1,200,000, 9/15/01-9/30/05
- Lammi-Keefe, C., Rodriguez, N., Freake, H. National Needs Fellowship (Human Nutrition). USDA, \$276,000, 7/15/02-7/14/07
- Legrand, A. Influence of Plant Morphology on Efficacy & Intraguild Interactions of Pea Aphid Predators. USDA-NRI, \$130,000, 10/1/01-9/30/04
- Li, Y., Cheng, Z. Characterization of Transgenic Aspen for Wood Productivity/Quality. Plant Biotech, \$40,000, 6/1/01-5/31/03
- Little, W. Implementation Node Site. National 4-H Council, \$20,270, 1/1/00-12/31/01 supplement
- Little, W., Taylor, U. 4-H Summer Nutrition Education Program. USDA-DSS, \$80,157, 10/1/01-9/30/02
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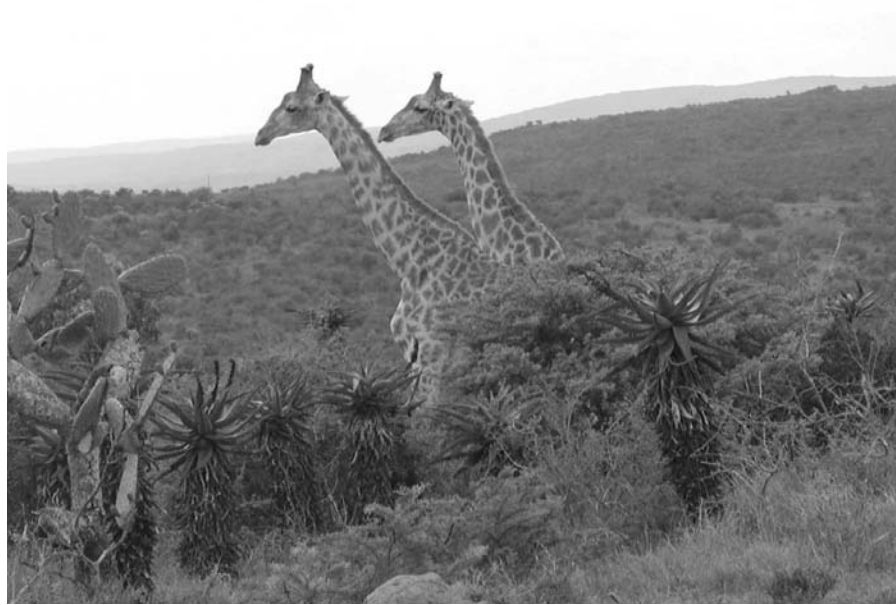


Photo by Steve Zinn

Giraffes photographed in November 2001 at the Great Fish River Game Reserve.

(continued from page 3)

opportunities. Equally important is that it will afford the opportunity for our undergraduate students to live and study for three weeks in the Eastern Cape.”

“The course being offered jointly by UConn and the University of Fort Hare is an important step in the linkage between the two institutions and is a practical example of the principle of reciprocal learning on which the linkage is based,” says Amii Omara-Otunnu, UNESCO Chair in Comparative Human Rights at UConn and director of the UConn-Fort Hare Linkage.

“The University of Fort Hare offers extraordinary opportunities for our students and faculty to work with South African counterparts and to experience firsthand an ecosystem rich in biodiversity. At the same time, our faculty will share their particular expertise with counterparts, contributing to capacity building at Fort Hare. It is a win-win partnership for students and faculty at both institutions.”

Ortega serves as UConn coordinator of the course, and Peter Lent is coordinator for UFH.

To learn more about the University of Fort Hare, click on www.ufh.ac.za.



Photo by Morty Ortega

The leopard tortoise is the largest tortoise at the Great Fish Game Reserve. They can weigh up to 90 pounds and feed on grass, shrubs, and succulents.



Photo by Morty Ortega

The Great Fish Game River is home to a small population of hippopotamuses that students may observe and study.

College faculty help develop graduate education program in Senegal

Rigoberto A. Lopez
Professor

Department of Agricultural and Resource Economics

Thirty hours after hours leaving Storrs, I was relieved to hear the announcement that we were arriving in Dakar, Senegal.

Senegal is a small country on the far western tip of Africa. Agriculture, natural resources, and tourism constitute the core of its economy. My trip involved mostly the first two. Specifically, I had come to draft plans for a masters degree program in agricultural and resource economics at the École Nationale d'Économie Appliquée (ENEA) in Dakar. Needless to say, the warm and dry weather was a welcome change in the middle of January.

Nearly a decade after the first ENEA faculty member arrived in Storrs to pursue an advanced degree in agricultural and resource economics, ENEA is now poised to establish graduate training of its own by 2004. The College's Department of Agricultural and Resource Economics has played a significant role in educating ENEA's faculty at the M.S. and Ph.D. levels.

ENEA is the leading school in French West Africa in educating professionals in economic development at the undergraduate level. However, in Senegal and the rest of West Africa, there has been an unsatisfied demand for graduates with M.S. degrees in economic development. ENEA is working to fill this gap and can provide a high-quality masters program at a fraction of the cost of sending students overseas.

In addition to helping build a graduate education program at ENEA, College faculty members are working with ENEA in research and training in peanut productivity (Boris Bravo-Ureta, professor of agricultural and resource economics and director of the UConn's Office of International Affairs), human nutrition (Rafael Perez-Escamilla, associate professor of nutritional sciences), and land use planning (Chester Arnold, extension educator).

With assistance and support from ENEA's administration, faculty, partners, and funding agencies, the seeds sown in "training the trainers" will come to fruition with the enrollment of the first masters class at ENEA in 2004.

Scientists studies relationship between plant form and insect predators

(continued from page 1)

predators such as ladybugs and green lacewings against the destructive pea aphid. These insect predators are widely used in pest management programs around the world.

In choosing to work with pea plants, Legrand had available for studies several types of near-isogenic pea plants, or plants that have leaf gene mutations but otherwise remain genetically the same as the normal garden pea plant.

Three leaf types were compared: acacia, parsley, and normal. The normal leaf type is composed of the rachis, or leafstalk, two pairs of leaflets, and terminal tendrils. The acacia leaf is composed of only the rachis and leaflets, while the parsley leaf has a highly branched rachis and tiny leaflets. Legrand found that leaf shape greatly influences the ability of predatory insects to move about the plant in search of aphids. While leaf morphology did affect the ladybug's and lacewing's ability to perform their predatory duties, it had no impact on how well the aphids reproduced on the plants.

Legrand says, "Our goal is to better understand how modification of the plant structure can enhance the control provided by natural enemies of pest insects."

The next phase of her research, supported by a three-year, \$130,000 grant from the USDA National Research Initiative, will be a field study conducted at the Plant Science Research Farm.

The field studies will include a new leaf type, afile, and plants with small stipules. Afile leaves have tendrils instead of leaflets. Stipules are small, leaf-like appendages at the base of a leaf.

"We hope to show that the simpler leaf morphology and smaller stipule is better for aphid management," says Legrand.

The afile type leaf is already available for commercial use and has been shown in other studies to have an influence on adult ladybugs. Should field studies confirm the lab results, Legrand would recommend this plant type and plants with small stipules for their added benefit of enhancing biological control by ladybug and lacewing.

In addition to the plant's effect on the ability of the predators to control aphids, field studies will examine the plant's role in the relationship of these predatory insects to each other. Sometimes these insects will feed on each other rather than on the plant pest, in this case the aphid, in what is called intraguild predation.

The study will examine whether variations in leaf morphology and stipule size regulate the occurrence of intraguild predation. This is important because one type of plant morphology may enhance the ability of the predator to find prey but it could also increase the mortality of predators through intraguild predation. This in the long run could disrupt the natural control of the aphids.

Besides her own her research, Legrand points out, other plant studies have identified many plant characteristics that affect predatory insects, including leaf hairiness, plant surface waxes, and chemicals released by the plant to attract or repel insects.

"As we better understand the relationship between plants and the natural enemies that help us destroy pests, we can manipulate the plant attributes to enhance the action of those natural enemies," she says.

Legrand is involved in two other pest control studies. In a project with Lorraine Los, fruit coordinator for the Integrated Pest Management program, the two compared pink and white sticky traps for monitoring tarnished plant bugs, a serious pest in peach orchards. Sticky traps monitor the insects present in an orchard, allowing growers to decide if and when to use pesticides.

It was known that white traps work well in apple orchards because they also attract European apple sawflies, but there was no information on what works in peach orchards.

The study follows up on work done by former plant science graduate student Vanessa LeFevre, who compared insect capture data for several trap colors. Results show that pink traps are more attractive to the tarnished plant bug than white traps, so would be useful for monitoring peach orchards.

In a new study, Legrand teams up with Leanne Pundt, extension educator in commercial horticulture, to look at combinations of two predatory mites that may be useful for managing western flower thrips, a significant plant pest in greenhouses.

Legrand foresees biological control playing a much larger role in pest control. "The sales of bio-control agents have been increasing as people are demanding more of these products. In general, biological control will play a bigger role as people try to alternatives for pest management. But we need to figure out how to make these agents as effective as possible. We need to know more about the behavior of these insects and how to produce them cost effectively."

"Our goal is to better understand how modification of the plant structure can enhance the control provided by natural enemies of pest insects."

— Ana Legrand

Assistant Professor in Residence
Department of Plant Science



Seven-spotted ladybird beetle foraging on a parsley pea leaf.

First Augustus and Charles Storrs Award given to Rosa DeLauro

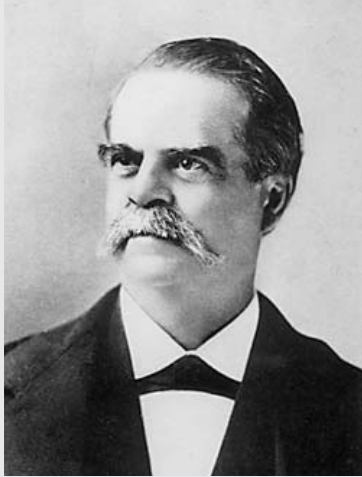
By Sara Putnam

At the College's second annual Leaders' Forum, held November 28 in Storrs, U.S. Rep. Rosa DeLauro was given the first Augustus and Charles Storrs Award for her work on behalf of the College, the Cooperative Extension System, and the Storrs Agricultural Experiment Station, and for her support in many areas related to the College's programs.

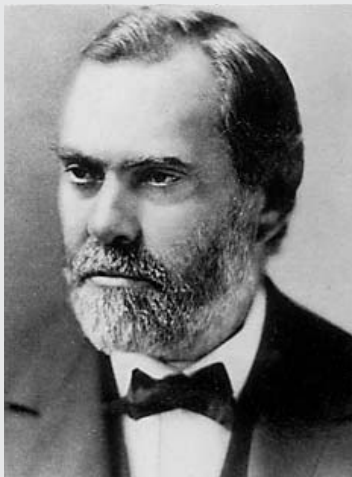
This new award, named for the brothers whose gift of land is now the site of the University, recognizes and honors those who, through their leadership, generosity, and belief in the future of Connecticut, support the College in its service to the state, region, and nation. DeLauro is the only member of Connecticut's Congressional delegation on the House Appropriations Committee who serves on the Labor-HHS-Education and Agriculture subcommittees. As a member of the House Agriculture Appropriations Subcommittee, she helps direct policy development and implementation of programs in extension, education, and research through USDA partnerships with the land-grant universities.

DeLauro advocates protecting natural resources and preserving open space, farmland, and historic sites for environmental and economic reasons. She also supports increased funding for ocean and coastal protection and has sponsored legislation that extends and increases the authorization for federal low-interest loans to municipalities to improve their wastewater treatment infrastructure. She also supports the protection of watersheds by reducing non-point source pollution.

DeLauro played a key role in obtaining funding for the College's new Agricultural Biotechnology Laboratory, dedicated last spring, and has supported many College research programs.



Augustus Storrs, ca. 1880



Charles Storrs, ca. 1880

Phase two of the ag biotech lab begins



By Kim Colavito Markesich

With the recent completion of the laboratory animal facility, phase one of the College's agricultural biotechnology complex is finished.

The 6,200-square-foot animal facility includes holding rooms, procedure rooms, a three-room surgery complex with separate surgery and recovery rooms, a rack and cage wash area, administrative office, showers, lockers, a break room for animal care workers, and a loading dock.

Louis Pierro, special assistant to the dean and retired associate director of the Storrs Agricultural Experiment Station, has witnessed an evolution since coming to UConn in 1960. "The new building has given our program a tremendous boost. It's brought together faculty, prompting collaboration across department and laboratory lines," he says.

Rick Simoniello, program director of animal care services and compliance for the University's Office of Animal Research Services, is pleased to have the additional lab facilities available for faculty research projects.

"The building and equipment are state of the art," he says. "The University has made a big commitment to improving our animal facilities. Over the last year and a half, we've spent over five million dollars on equipment, renovations, and this new facility."

Pierro has coordinated the design and construction of the complex and

continues to be involved with the project on a daily basis, but he credits Dean Kirklyn Kerr for the success of the plan. "He has been the driving force behind this," Pierro says.

Says Kerr, "With the completion of the transgenic animal facilities, we're excited about the new research possibilities we have. This new facility, funded primarily by a grant from the U.S. Department of Health and Human Services, will allow faculty to pursue research that could lead to curing or preventing some diseases in humans or animals."

Phase two of the construction is currently underway with a projected completion date of July 2002. Phase two includes the 19,000-square-foot Advanced Technologies Institute Building (ATIB) and a greenhouse complex. The ATIB will house administration and clerical support areas, research laboratories, meeting rooms, five incubator laboratory-office suites, and five research labs with office and carrel space.

The greenhouse complex includes six glass-enclosed growing areas and an area reserved for future additions of plant growth chambers.

"This new facility is one of the most modern in the country," says Kerr.

In addition to HHS, other funding sources include the State of Connecticut UConn 2000, USDA, HUD, the U.S. Department of Energy, and the University.

Dairy Bar celebrates 4-H centennial with new flavor

By Hadley Weiss

To commemorate the 100th anniversary of 4-H, the UConn Dairy Bar has created a new flavor, 4-H Empowermint. White peppermint ice cream with green peppermint flavored candies, Empowerment has been wildly successful since its debut in January. Sue Gavitt, manager of the Dairy Bar, says that Jennifer Nadeau, assistant professor and horse specialist in the Department of Animal Science, came up with the idea of creating a new ice cream and, discussing some suggestions, the Dairy Bar staff created the ice cream.

The ice cream's name has also sparked some customers' interest in 4-H. "With the new ice cream, we've had a lot of people ask, 'What is 4-H?' The ice cream has been a great way to get people involved with 4-H and the community," says Gavitt. Nancy Wilhelm, from the Cooperative Extension System's 4-H office, has placed an exhibition in the Dairy Bar focusing on the centennial celebration and a sign-in sheet for 4-H alumni.

Gavitt says the Dairy Bar will feature Empowermint ice cream in their famous "sundae of the month" in April, at the time when the National 4-H Congress will meet to celebrate its centennial. She says the sundae may include hot fudge and sprinkles, but the exact recipe for the sundae contents will be kept top secret until its release.

In another development, the Dairy Bar's ice cream is now being sold at athletic events at Gampel Pavilion. Gampel's food service provider, Marriott Foods, is purchasing vanilla ice cream cups from the Dairy Bar and adding their own toppings.

Commenting on the Dairy Bar's recent successes, Gavitt says, "We've already sold 1,500 cups of ice cream to Gampel and we just started." The Dairy Bar has sold 11 13-gallon tubs of Empowermint since its release less than a month ago; each tub contains 50 to 60 scoops of ice cream. People are now coming in to the Dairy Bar and asking for Empowermint by name, says Gavitt, and she is sure its popularity will continue to grow. "Even though we didn't do any promotion for it, people have heard about it," she says. The ice cream is also available in prepackaged half-gallons in the Dairy Bar's new lighted display case. Even during the winter, Gavitt says, the Dairy Bar does well. The Dairy Bar has a new Web site that showcases its menu and promotions at www.canr.uconn.edu/ansci/dairybar/dbar.htm

Visit the Dairy Bar Web site at
www.canr.uconn.edu/ansci/dairybar/dbar.html



Do you have a special 4-H memory?

Help celebrate 4-H's 100th Birthday

4-H'ers are special people.
Are you now or were you ever a 4-H member?
We'd like to hear from you.

Name _____

Complete mailing address _____

Email _____

Are you a current 4-H member? Yes No

Were you a 4-H Member? Yes No In what state? _____

If you have a special memory of 4-H, please write it on the back of this form and mail to Nancy Wilhelm at 1376 Storrs Road, Storrs, CT 06269-4036 or email to nancy.wilhelm@uconn.edu

New Fairfield 4-H'er named state's top middle school volunteer of the year

By Ede Valiquette
Extension Educator

Eleven-year-old Lauren Meehan, a New Fairfield 4-H member, was named Connecticut's top middle school volunteer for 2002 by the Prudential Spirit of Community Awards, a nationwide program honoring young people for outstanding acts of volunteerism. As a state honoree, Meehan will receive \$1,000, an engraved silver medallion, and an all-expense-paid trip in May to Washington, D.C., where she will join the top middle school youth from other states for several days of national recognition events. Five middle school youth will then be selected from the state honorees and named as national winners.

Meehan was nominated by the Cooperative Extension System 4-H/Youth Development program in Fairfield County. A 4-H'er in New Fairfield and a sixth grader at New Fairfield Middle School, she created a "Pet Pantry" for clients of a local senior center's food pantry. The two-year-old Pet Pantry helps seniors feed and care for their pets by providing free dog and cat food. "For many senior citizens and people with terrible illness, all they have are their pets," says Meehan. "They shouldn't have to choose medicine and bills over keeping their pets."

With permission from the food pantry coordinator, Meehan acquires pet food in a variety of ways; she writes letters to newspapers asking for donations, calls friends, organizes pet food collection drives, recycles cans, and uses the money she earns working at a local riding stable to fund weekly shopping trips to restock empty Pet Pantry shelves. The



Lauren Meehan, Connecticut's top middle school volunteer of the year.

county 4-H program and her school have also conducted pet food collection drives. During the past year, Meehan has provided more than 1,700 pet food items to the Pet Pantry.

The Prudential Spirit of Community Awards is part of a broad initiative created by Prudential to encourage young people to become involved in community service. The awards program, now in its seventh year, is conducted by Prudential Financial in partnership with the National Association of Secondary School Principals. A record 28,000 high school and middle school students submitted applications for this year's program.

Faculty member works with the New Haven Ecology Project

By Hadley Weiss

Founded in 1990 as a way to teach inner-city high school students about the environment and themselves, the New Haven Ecology Project takes an innovative approach to learning by integrating farm work and classroom experiences. The parent organization of Common Ground High School and part of Connecticut's charter schools program, the New Haven Ecology Project is located at the 20-acre Springside Farm in New Haven and is bordered by the 1,500-hundred acre West Rock Ridge State Park. The mission of

"I look forward to it because they're good kids and I get to learn from them too."

— Michael Darre

Associate Professor
Department of Animal Science

the New Haven Ecology Project is to cultivate habits of healthy living and sustainable environmental practices for a diverse community of children, adults, and families.

In raising and studying animals and vegetables at the school's farm, students at the New Haven Ecology Project learn about many aspects of the ecosystem during their extended school day. Michael Darre, associate professor in the Department of Animal Science, teaches the students about chickens and how to raise and process them. As extension poultry specialist for Connecticut, Darre is responsible for the College's adult and youth extension poultry programs, and he has given his time to the New Haven Ecology Project since its inception.

Darre finds his work with the students of the New Haven Ecology Project wholly rewarding. "I look forward to it because they're good kids and I get to learn from them too," says Darre. The process begins each year in early spring when Darre travels to the school in early spring to give a class on the chicken and introduce the project the group is about to undertake. He later goes back to the school's farm to deliver chicks donated by a local commercial hatchery. In the eight to nine weeks it takes chickens to reach market size, the students learn how to care for the animals. The students raise both meat poultry and laying hens.

Darre returns to the school in early June to process the chickens for eating. "We don't just 'process' the birds," says Darre, "we also make it a biology class. I dissect a carcass so they learn where the heart is, where the lungs are, and what it looks like. I show them the major muscle groups and why we eat them. It's important to teach the students to get the bird from a live animal to ready to eat." The students' efforts culminate with a June barbecue, where they enjoy vegetables they have grown and the chickens they have raised and processed.

Green Valley Institute informs land use decision-makers

(continued from page 8)

conservation commission liaison.

In a pilot project, the GVI is working with the four adjacent towns of Eastford, Ashford, Hampton, and Chaplin, all of which are preparing to develop new ten-year plans of conservation. These towns make up about two-thirds of the land area in the Natchaug River Watershed, which supplies water for the town of Windham and the city of Willimantic. The GVI team will work with the

Ruth Cutler, a landscape designer and long-time extension associate, is the volunteer coordinator. A survey of town commissions revealed a chronic shortage of volunteers. Cutler coordinates an annual volunteer recruitment weekend retreat at the Windham-Tolland 4-H Camp in Pomfret, where volunteers are given a crash course in natural resources and then assisted in finding a volunteer opportunity of interest.

Cutler finds many volunteers who want to dig in and get their hands dirty, rather than sit on commissions.



UConn associate professors David Wagner (right) and Jack Barclay (center) discuss early succession wildlife habitats at a GVI sponsored landowner workshop on Audubon's Bafflin Sanctuary in Pomfret, CT.

towns to help identify their most valuable natural resources, provide volunteers to help with the projects, and assist in using this information in their future plans.

"We're hoping to demonstrate a method for doing these natural resources inventories in a timely and cost effective way," explains Steve Broderick, extension educator and state certified forester, who leads the GVI.

"One of the goals of the corridor is to encourage cooperative town planning that recognizes that each town is not an island," he continues. "If every town is using the same data in the same way, then theoretically over time, their plans of conservation and development could become building blocks to a greater whole for the entire corridor region."

In addition, the GVI will work closely with the Windham, Northeast Connecticut, and Southeast Connecticut regional councils of governments. Says Broderick, "They are key partners in this endeavor."

As part of its continuing education effort, in addition to creating brochures and other work materials, the team facilitates workshops on protecting family lands and a four-day GIS course for municipal staff and commission members.

She helped form the Green Valley Brush Brigade, an all-volunteer "swat team" that performs a variety of tasks such as maintaining trails and building boardwalks.

A new project will provide technical assistance in the form of legal and tax consultants for family landowners and community design assistance for town committees.

Last year, the GVI received a grant of approximately \$90,000 from the QSHC for its first year of operations. In addition, Broderick applied for and received a couple of smaller grants from private foundations, including the Norcross Wildlife Foundation.

Says Broderick, "The best thing about the corridor is that it truly is a grassroots organization. It was started by a group of citizens from northeastern Connecticut back in the 1980s that used to meet in the basement of our Windham County Extension Center."

"That vision has evolved into the Heritage Corridor. To this day, the entire Board of Directors, other than those appointed by Governors Rowland and Swift, is made up of local citizens representing their communities."

Visit the GVI's Web site at www.thelastgreenvalley.org.

Friends of the College

Connecticut Lions Club



From left to right: David Schroeder, Otto Strobino, and Kirklyn Kerr.

By David Schroeder
Professor and Head
Department of Natural Resources Management and Engineering

The College's relationship with the Connecticut Lions Club started in 1982 with the planting of 625 eastern white pine trees just off campus in the UConn Forest in what was to be called the Lions Memorial Forest. District Governor of the Lions Otto Strobino and members of his cabinet came up with the idea of planting a tree for each of the Lions organizations throughout the world. Otto planted the first tree and the remainder were planted by natural resource students under the direction of Prof. David Schroeder. The Lions Memorial Forest is east of Gurleyville Road and adjacent to Valentine Meadow.

The day of the Memorial Forest planting, the Lions also planted a Japanese white pine on campus in honor of the International President of the Lions, who was from Japan. University President John DiBiaggio and Dean Ted Kersting attended the planting. Since that day in 1982 the Lions have planted a tree every year on the College side of campus. Their generous donations have contributed to the beauty of the campus and enhanced the College's teaching program. Trees planted by the Lions are used in four College classes. In fact, the campus's only specimens of whitebark pine, Ohio buckeye, and ponderosa pine were planted by the Lions. Several years ago, the Lions also gave a bench that sits in the Lions Garden, just west of the old polo ring. The spot is marked by a rock with a bronze plaque. Associate Professor of Plant Science Ed Corbett and Prof. Schroeder work closely with the Lions on the yearly tree plantings.

Visit the Connecticut Lions Clubs on the Web at www.ctlions.org.

Block and Bridle

By Kim Colavito Markesich

The Block and Bridle Club is the University of Connecticut's oldest continually active club. For 72 years the club has promoted animal science and agriculture at the University and across the state. The club is perhaps best known for its annual Little International Livestock and Horse Show, at which club members and other members of the University community show sheep, horses, cattle, swine, or poultry. The show is financed by the Club's annual ham sales. Club members also participate in the Eastern States Exposition, Northeast Student Affiliates Intercollegiate Judging Contests, and an annual awards banquet.

Block and Bridle Club advisor Kathy Pelletier, assistant farm manager in the Department of Animal Sciences, speaks enthusiastically about the club members' commitment: "I really enjoy working with these students. They're very serious about making a change in agriculture. They want to keep it alive. That's what keeps me working with them."

At least 20 of the 30 current members are very active, participating not only in meetings but also in planning and conducting the club's events. Co-adv-

sors who work with the students on major events are Mike Darre, professor of animal science, Cameron Faustman, professor and interim department head of animal science, and Arnold Nieminen, farm manager.

The club has a long record of service to the College and the University. It has raised money for judging teams, hosted groups from other institutions, organized field trips, helped staff with livestock field days, helped with blood drives, and helped establish the polo and equestrian clubs.

Pelletier feels the hands-on experience is invaluable to the students. Club members pursued a variety of careers after graduation including veterinary medicine, research positions at companies such as Pfizer, and agricultural sales. Some continue promoting animal science through the Farm Bureau and other organizations.

Hilary Sepe, Block and Bridle Club president, believes the club helps members develop leadership, organizational, and public relations skills. She says, "The club provides students with the opportunity to explore their interest in animal science outside the classroom. By participating in events, members develop a sense of teamwork and pride in the University of Connecticut."

"The club provides students with the opportunity to explore their interest in animal science outside the classroom. By participating in events, members develop a sense of teamwork and pride in the University of Connecticut."

— Hilary Sepe
Block and Bridle President

Department of Animal Science Spring 2002 Schedule of Programs and Events

All programs and events are open to the general public and, with the exception of the summer riding lessons, are free of charge.

April 6	UConn Intercollegiate Horse Show: Regional Competition Contact: Janice Callahan (860) 486-3377
April 20	UConn Dairy Show Contact: Arnie Nieminen (860) 486-2023
May 4	UConn Annual Horse Auction Contact: John Bennett (860) 486-2034 www.canr.uconn.edu/ansci/horsesale.htm
May 20	Summer Horseback Riding Lessons Contact: Janice Callahan (860) 486-2414

Visit the Department of Animal Science Web site at www.canr.uconn.edu/ansci

UCANRAA board elects new officers and committee members

At a recent meeting the UCANRAA board elected the following officers for 2002-2003: Jim Cropley, president; Jennifer Syme, vice president; Erica Fearn, secretary; and Richard French, treasurer.

Committee assignments were made to the following people:

Awards: Jim Cropley, Erica Fearn, Alan Morris
Annual meeting: Jim Copley, Rich French
Nominating: Lara Sullivan, Erica Fearn, Austin Tanner
Pathways: Carol Youell, Nancy Weiss, all officers
Auction: all board members; co-chairs Heather White and Jen Syme plus auction committee
Graduation: Lara Sullivan, Linda Drake, Rich French, Jim Cropley

UCANRAA calendar of events

March 26	Scholarship reception, 6:00 p.m., Rome Ballroom
April 4	Faculty and staff awards and recognition luncheon
April 15	Deadline for Pathways
May 13	UCANRAA board meeting, 7:00 p.m.
May 18	Graduation reception, Ratcliffe Hicks Arena
May 31	Class of 1952 reunion
June 10	Auction committee meeting, 7:00 p.m.
June 15-19	NAADA conference, Utah State University
July 8	Board meeting, 7:00 p.m.
July 10	CNLA summer meeting, ice cream out reach, Baker's Nursery
July	Deadline for Pathways auction publicity
July 18 or 19	Project O lighthouse trip for auction volunteers and board members
August 12	Auction committee meeting, 7:00 p.m.
September 9	UCANRAA board meeting, 7:00 p.m.
September 29	Cornucopia Fest (all day) and UCANRAA auction, 2:00 p.m.
October 15	Auction wrap-up and UCANRAA board meeting
October 19	Homecoming
November 15	UCANRAA annual meeting and awards program, 6:00 p.m., Alumni House

Alumni and friends are welcome to participate in any UCANRAA activities. Volunteers are needed for the UCANRAA auction in September, the major fund-raising event of the year. Please contact Heather White or Jen Syme to sign up.

Obituaries

George E. Whitham, 83, died January 25, 2002. He graduated in 1941 from the College and enlisted in the U.S. Army. Following World War II he was employed by the University of Connecticut Cooperative Extension Service as county agent for New London, Windham, and Tolland counties. He later joined the administrative staff as county agent leader. He was promoted to associate director of the Cooperative Extension Service, a post he held until his retirement from the University in 1978.

Whitham had a distinguished record of service to his community that began in 1970, when he was elected to the Mansfield Board of Education. He served as a

University of Connecticut Agriculture and Natural Resources

pathways

ALUMNI ASSOCIATION



Celebration at Horsebarn Hill Arena: A recent tribute to Addie Connolly, the first director of the College's accredited riding program, featured a presentation to by John Bennett (center), horse facilities manager, and Jim Dinger, professor of animal science. More than 100 people attended the event, which also featured a demonstration of UConn Morgans. John Bennett was named Man of the Year and inducted into the American Morgan Horse Hall of Fame at the American Morgan Horse Association Annual Convention in Orlando, Florida. He was recognized recently for completing 15 years of service in the Department of Animal Science.

Alumni News

Carlos Fetterolf, '50, B.S. in wildlife management and zoology, returned to UConn from his Ann Arbor, Michigan, home last August to chair the assessment of the Connecticut Sea Grant Program of the National Oceanic and Atmospheric Administration (NOAA). Connecticut Sea Grant, housed at the Avery Point campus, will expand research and education programs in Long Island Sound. Fetterolf was also involved with an American Fisheries Society symposium in Phoenix on Fisheries in a Changing Climate.

Daniel Digiulio, '63, B.S. in dairy production, retired from his position as director and teacher in the Middletown vocational agriculture program. After graduating, Digiulio was farm manager at Spring Hill Farm from 1963 to 1965. He returned to school, became certified as a vo-ag teacher in 1966, and began his teaching career at Glastonbury High

School. In 1969, he received his M.S. degree and in 1973 began his work in Middletown where he remained until his retirement in 2001. Digiulio was active in the Connecticut National Guard for 34 years and retired at the rank of brigadier general. His wife, Theresa Digiulio, is a 1965 graduate of the College. Their daughter, Kristin, graduated in 1994.

Amy Hanaburgh, '94, B.S. in agricultural economics, has returned to Connecticut as a governmental relations associate for the firm of Sullivan & LeShane in Hartford. Hanaburgh worked for the Connecticut Farm Bureau from 1995 to 1997 and from 1997 to 1999 for the New York State Farm Bureau. She took a leave of absence in October 1999 to work on the state ratification of the dairy compact. By April 2001, she was back in Connecticut working for the House Republicans and the staff of Sen. John McKinney. New York Governor Pataki contacted her to work again on the dairy compact, which she did before assuming her present position with Sullivan & LeShane.

Obituaries *(continued)*

member of the board of selectmen, as the first deputy mayor, as mayor of Mansfield for two terms, and for 14 years on the Mansfield Town Council. He also served as chairman of the Regional District 10 Board of Education (E.O. Smith High School) from its inception until 1993. He was an active member of St. Thomas Aquinas Church, the Mansfield Historical Society, the Mansfield Training School Board of Directors, Joshua's Trust, and the Windham Hospital Board of Directors.

Whitham is survived by his wife of 57 years, Dolly, and their 10 children, 26 grandchildren, and eight great-grandchildren. Memorial gifts may be made to Windham Hospital for outfitting family lounges.

Richard Griswold Willard, 85, died February 12, 2002. He studied olericulture, worked at the Lee Farm, belonged to Alpha Gamma Rho, and graduated in 1940 with a B.S. in horticulture. He worked in Hartford and Waterbury as a market reporter for the Connecticut Department of Agriculture until World War II. He served with distinction in the Pacific

Theatre, U.S. Counter Intelligence Corps 441st CID. After the war Willard worked for Comstock, Ferre & Co., first as regional seed salesman, later as general manager and treasurer from 1959 to 1974, then as president until his retirement in 1980.

Willard was involved extensively in the town of Wethersfield and also served as president of the Connecticut Horticultural Society. He was elected to Gamma Sigma Delta and ran the All-America Selections national testing program for Comstock, Ferre & Co. from 1980 to 1989. He was a nationally accredited vegetable judge for those trials. He is survived by his wife, Corinne, a daughter, Anne G. Willard, and sons, Richard G. Willard, Jr. and Douglas W. Willard. He was predeceased by a daughter, Jeanne Selig. He is also survived by 10 grandchildren, two sisters, and many nieces and nephews.

Memorial gifts may be made to the College's Dean's Fund as well as to the Old Wethersfield Community Foundation and the First Church of Christ, Wethersfield.

Green Valley Institute informs land use decision-makers

By Kim Colavito Markesich

After more than a year of planning, the Green Valley Institute (GVI) began operations in January 2001. A partnership

between the Quinebaug-Shetucket National Heritage Corridor, Inc., and the College of Agriculture and Natural Resources,



the GVI delivers bring information and resources to those involved in making land use decisions, including farm and forest owners, municipal leaders, land trusts, contractors, and developers.

The Quinebaug-Shetucket National Heritage Corridor (QSHC) is the fourth federally recognized national heritage corridor, a designation intended to protect areas with natural cultural, archeological, or historical resources of national importance. The QSHC is said to be the "last green valley" in the Northeast between Washington, D.C. and Boston, as illustrated by satellite images showing a solid band of light along the coast, unbroken except for this area of 26 towns in Connecticut and nine in Massachusetts.

The availability of up-to-date information for land use decision-makers is crucial. Private owners collectively hold over 80 percent of the state's land area in the corridor, and land use planning and regulation is done almost exclusively by local town boards, staffed primarily by volunteers from the community. It is for these landowners and volunteers and others involved in land use decisions in the corridor that GVI pro-



John Clausen, associate professor of natural resources in the Department of Natural Resources Management and Engineering, discusses water quality assessment techniques in A New Introduction to the Natural World.

vides information and assistance.

The GVI program has four principal focuses:

- Building and sustaining a corridor-wide GIS spatial database for use by land use decision-makers
- Continuing education
- Volunteer recruitment
- Technical assistance

Michael Altshul, GVI's geographic information systems specialist, and Susan Westa, assistant educator in land use and natural resources, were hired in positions cooperatively funded by the corridor and the College.

As part of a five-year plan to develop the best possible land use database, Altshul has developed a map of the largest unfragmented and minimally fragmented areas in the corridor. Altshul works in the College's Laboratory for Earth Resource Information Systems, directed by Dan Civco, associate professor in the Department of Natural Resources Information Systems.

Susan Westa works with municipal decision-makers, including conservation and planning and zoning commissions. "I hope the communities realize that we're a resource," she says. "We're here, take advantage of us." Holly Drinkuth, Brooklyn Conservation Commission chair, acts as a

(continued on page 9)

College news

Pesticide Program Coordinator receives conservation award

By Bud Gavitt

The Hartford County Soil and Water Conservation District presented a Certificate of Appreciation to Candace Bartholomew, a Cooperative Extension educator at the West Hartford extension center. She was cited for her 16 years of outstanding work in conservation focusing on pesticide safety.

Bartholomew, who is Pesticide Safety Educational Program coordinator, explains that farmers and others who purchase and apply restricted use pesticides on plant crops and turf must receive training and be certified to use them. This involves completing two and one-half credits each year for five years and passing an examination administered by the State Department of Environmental Protection.

According to Bartholomew, there are about 800 private certified pesticide applicators in the state. Of this total, she reports, more than 200 each year receive recertification credits at one of seven training sessions held between October and January at extension centers around the state. They are conducted by Bartholomew, extension educators in livestock Richard Meinert and Joyce Meaders, and Leanne Pundt, extension educator in commercial horticulture.

Another 250 private applicators receive recertification training and credits at programs cosponsored by the Connecticut Agricultural Experiment Station, the New England Cooperative

Extension systems, and various commodity groups. Commodity producers such as Christmas tree growers receive season-long training as well. Cooperative Extension also offers annual short courses for 300 people who seek certification and recertification as ornamental, turf, or golf course commercial supervisory pesticide applicators. These participants also must pass a written examination given by the DEP.

"Our primary goal in these training sessions," Bartholomew says, "is to make sure that applicators use pesticides safely and only when needed. It's necessary to follow pesticide regulations. Registrations are always changing, and having that certification training gives users more tools when it comes to control pests."

This past year Bartholomew and other training team members focused on pesticide exposure and treatment for those who are poisoned inadvertently, coinciding with a national effort to brief doctors and emergency personnel on how to recognize pesticide poisoning symptoms and provide proper treatment. "Anyone involved in a pesticide accident should call 911, and the operator will refer the person to a hospital that can provide prompt treatment," Bartholomew says.

The pesticide safety educational programs are mandated by the Federal Insecticide, Fungicide and Rodenticide Act. The act directs the Environmental Protection Agency to cooperate with the U.S. Department of Agriculture and use the educational services provided by the state Cooperative Extension Systems.