What’s in Your Tomato?
After two theme-oriented issues, *Momentum* has returned to its traditional format, highlighting several timely, but often unrelated, programs and projects that are already benefiting or have the potential to benefit citizens throughout Maryland and beyond.

One of these projects is the research of microbiologist Dr. Jianghong Meng, who is exploring strategies for preventing bacterial contamination of a popular food staple—the tomato—which is particularly vulnerable because of the long and winding road from farm field to home kitchen.

And it is only natural that the spring issue of *Momentum* celebrates the 30th birthday of the Maryland Master Gardener program—one of our great Extension success stories. Since its establishment, this program has helped literally thousands of homeowners and communities adopt environmentally friendly approaches to landscape beautification and management. And it’s still going strong.

Two related articles highlight the collaboration of faculty, students, and residents of the surrounding community to identify and catalog the trees that make up our urban landscape, and an invention by one of our own alumni that has ensured the survival of millions of newly planted trees in times of drought.

I invite you to sit back, put your feet up, and discover what the University of Maryland College of Agriculture and Natural Resources is doing for you.
Are You Looking for More?

Are you a high school student looking for more?

Are you ready to transfer to the University of Maryland?

We have what you are looking for in the College of Agriculture and Natural Resources.

If you want a place where the faculty and staff are willing to do anything to help you, where the students are friendly, and where there are a lot of internship and club opportunities, then this is the place for you.

WE HAVE MORE!

- Agricultural and Resource Economics
- Animal and Avian Sciences
- Environmental Science and Technology
- Nutrition and Food Science
- Plant Science and Landscape Architecture
- Institute of Applied Agriculture
- Virginia-Maryland Regional College of Veterinary Medicine
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Glori Hyman Named Acting Director of IAA

Glori Hyman was appointed acting director of the Institute for Applied Agriculture (IAA), effective Oct. 1, 2007, following the retirement of Dr. Tom Hartsock, who served as director for the past 7 years.

“Glori’s experience with IAA during the past 17 years as instructor and public relations coordinator gives her valuable familiarity with the program and industry clientele, which will enable her to provide strong leadership to the institute,” says Dr. Cheng-i Wei, dean of the College of Agriculture and Natural Resources. “I thank Tom for doing a good job in directing IAA and for his contributions to the college as Extension specialist, instructor in Animal and Avian Sciences, and coordinator of the birthing center at the Maryland State Fair. I look forward to his continued involvement with the college and 4-H.”

The college will work with IAA to form a committee to evaluate the needs of the institute and make recommendations for its future direction. These recommendations will guide the development of a strategic plan for greater promotion of IAA programs, increased student enrollment, and improvement in student quality.

Director of Plant Diagnostic Laboratory Hired

Dr. Karen Rane has been appointed director of the University of Maryland Plant Diagnostic Laboratory. Rane comes to Maryland from Indiana, where she served as senior plant disease diagnostician and co-director of the Purdue University Plant and Pest Diagnostic Laboratory. She has more than 20 years of experience in plant problem diagnosis, particularly in the diseases of ornamentals and vegetables.

Rane received her BS degree in ornamental horticulture from Delaware Valley College of Science and Agriculture in Doylestown, PA, an MS degree in ornamental horticulture from Cornell University, and a PhD in plant pathology from the University of Massachusetts. She has served as chair of the Diagnostics Committee of the American Phytopathological Society (APS) and as senior editor of Plant Health Progress, an online journal for applied plant health issues published by APS.

Horsemen’s Party Raises Money for 4-H Fund

The 21st Annual Maryland Horsemen’s Party held last September drew more than 200 people and raised approximately $10,500 for the Sallie Robertson Memorial 4-H Endowment. This endowment fund helps send Maryland’s horse teams to the Eastern National 4-H Horse Roundup in Louisville, KY, and supports the Maryland 4-H Program throughout the year. Recipients of the Maryland 4-H Youth Development Award (Tommy and Judy Smith) and Maryland 4-H Horse Program Volunteer of the Year Award (Dr. Al Starr) were also recognized at the party.

Varner Named Coordinator for eXtension and Online Learning

Dr. Mark Varner has assumed the role of coordinator of eXtension and online learning for the College of Agriculture and Natural Resources (AGNR) following the resignation of Dr. Valorie McAlpin as executive director of online learning.

“Dr. Varner brings much valuable experience to this position through his involvement with DAIREXNET, one of the first virtual communities to receive national eXtension development funding.”
Varner has most recently been working with colleagues in AGNR and Russia on a three-year USAID higher education development competitive grant entitled “Putting Learning into Distance Education.” Varner’s initial focus in his new role will be on development of Maryland’s contributions to the new national Cooperative Extension System initiative, eXtension. He also will continue as professor, Extension dairy scientist, and undergraduate coordinator for the Department of Animal and Avian Sciences.

**ANSC Ranks in Top Ten for Faculty Productivity**

*The Chronicle of Higher Education* reported last fall that Academic Analytics had ranked the college’s Department of Animal and Avian Sciences (ANSC) No. 9 in the nation for faculty productivity for 2007. The metric used is a “faculty scholarly productivity index,” an unbiased assessment of faculty publication rates, impact on research through citations, grant funding, and awards received by faculty.

ANSC ranked particularly high in the percentage of award-winning faculty, tying with the University of California at Davis for first place, at 25 percent. Crediting all faculty members for the achievement, department chair **Dr. Tom Porter** stated that this ranking “is a great reflection on our research program” and urged the department “to continue to publish high quality research and support that research through competitive grants.”

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**AGNR Wines Win Top Honors at International Competition**

Seven wines from the College of Agriculture and Natural Resources’ Viticulture and Enology Research and Extension Program—including three made with apples—received medals at the 2007 AWS International Amateur (non-commercial) Wine Competition. They were:

- 2005 Apple Ice Wine—Silver
- 2005 Apple Blush—Silver
- 2005 Linae—Bronze
- 2005 WMREC Reserve Red—Bronze
- 2005 Chambourcin—Bronze
- 2005 Chardonnay—Bronze
- 2005 Vidal/Chardonnay/Apple Ice Wine—Bronze
Extension Program Receives Grant to Teach Finance Lessons

The Worcester County office of the University of Maryland Cooperative Extension was one of six organizations selected by the Rural Maryland Council (RMC) to receive a total of $100,000 in grants from its direct service grant program. Strengthening the Well Being of Rural Maryland Families. This initiative, made possible with funding from the Annie E. Casey Foundation, awards grants to non-profit organizations that help disadvantaged families in rural areas improve their financial literacy and stability.

Worcester County’s “Parents and Teachers as Wealth Coaches” program delivers train-the-trainer programs to parents, primary caregivers, and K-12 educators. It integrates basic personal finance lessons into daily encounters with children in classrooms, at home, and in the community. According to Megan O’Neil-Haight, a 4-H agent and family, youth, and community educator, the grant will help the program meet an increasing demand for materials, in-school assemblies, and parent and teacher training.

Forestry Education Program a Two-Time Winner

“The Woods in Your Backyard,” an educational program developed by Extension natural resources specialist Jonathan Kays, received two awards from the Association of Natural Resource Extension Professionals. The program and its educational manual help landowners with up to 10 acres of land to make decisions that have a positive impact on water, wildlife, recreation, and forest health.

Hail to the Chiefs!

Two faculty members in the Department of Agricultural and Resource Economics will soon be assuming presidential responsibilities. Distinguished University Professor Dr. Richard Just was recently elected president of the American Agricultural Economics Association (AAEA); he will follow in the footsteps of colleague Dr. Bruce Gardner, who has served as AAES president. Dr. Lori Lynch was recently elected president of the Northeastern Agricultural and Resource Economics Association. Both she and Just will have an opportunity to shape the future of the profession.

Extension Awarded Poultry Biosecurity Grant

The University of Maryland Cooperative Extension has received funding from USDA’s Cooperative State Research, Education, and Extension Service to develop a biosecurity program for small poultry flock growers in Maryland. This grant was provided as part of the Smith-Lever Special Needs funding program, which supports innovative, education-based approaches to addressing emergency preparedness and specific responses related to natural and man-made disasters.

The development and implementation of a strong biosecurity program for small flock poultry producers is essential to prevent the spread of diseases in Delmarva’s poultry. An outbreak of such diseases as Avian Influenza or Exotic Newcastle Disease would have a negative economic impact on poultry growers and processors and present potential human health risks.

This grant will fund educational workshops and resources for small flock poultry producers, Extension professionals, and volunteers. This project will provide a platform to expand Extension’s outreach and education to small flock owners—especially during an emergency disease situation—in addition to providing Extension professionals and volunteers with the tools and resources to prepare and rapidly respond to an avian disease outbreak.

The individuals participating in the development of this program are Dr. Jennifer Timmons, regional poultry specialist; Dr. Nathaniel Tablante, Extension poultry veterinarian; Dr. Nickolas Zimmermann, broiler specialist; and Pam King, Charles County Extension agent.
**Avian Influenza Grant Extended for Three Years**

The U.S. Department of Agriculture has renewed its $5 million three-year grant to the National Research Initiative Coordinated Agricultural Project on Avian Influenza. The project is a consortium led by the University of Maryland under the direction of **Dr. Daniel Perez**, associate professor at the Virginia-Maryland Regional College of Veterinary Medicine. According to **Dr. Siba Samal**, associate dean of veterinary college, “This renewal comprises 16 research proposals, including 2 from the University of Maryland, and represents 3 institutions across the nation.”

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**Turfgrass Scientist Receives National Award**

**Dr. Peter Dernoeden**, professor of turfgrass science in the Department of Plant Science and Landscape Architecture, has received the Fred V. Grau Turfgrass Science Award from the Crop Science Society of America (CSSA) in recognition of his significant career contributions in turfgrass science. In addition to mentoring graduate students and teaching a course in pest management strategies for turfgrasses, Dernoeden conducts research and Extension programs involving turfgrass pathology, weed science, and turfgrass management. He also coordinates the college’s turfgrass disease diagnostic laboratory and field days. Dernoeden has served as an associate editor for *Crop Science*, is an ASA Fellow, and is a recipient of the Northeastern Weed Science Society Outstanding Researcher Award.
What’s in Your Tomato?
Researchers Aim to Reduce Salmonella Contamination

Virginia Gerhart

When we rinse a fresh, store-bought tomato before slicing or taking a bite, we’re usually removing dirt and pesticide residue. If the tomato’s been contaminated externally by a pathogen, however, rinsing is not likely to kill or remove the bacteria, especially if it’s lodged in the stem scar; if the tomato has internalized the pathogen, nothing can kill it—other than cooking—which in the case of salad preparation, for example, isn’t feasible. Eliminating pathogens such as *Salmonella* and *E. coli* once they’ve infected a fruit or vegetable, therefore, isn’t the goal of food safety microbiologists like Dr. Jianghong Meng of the Nutrition and Food Science department. Their goal is preventing microbial contamination in the first place.

A major contaminant of tomatoes is the *Salmonella* serotype known as Newport, now third only to *S. Typhi* and *S. Enteritidis* as the most common *Salmonella* serotype in the United States. *S. Newport* is also showing itself to have a remarkable facility for developing and disseminating multidrug-resistant strains. So far researchers have isolated strains of *S. Newport* found to resist at least 9 of 17 antibiotics tested. More troubling is that these strains are exhibiting a decreased susceptibility to the drug ceftriaxone, often prescribed to fight serious infections in children.

Meng is currently collaborating with Dr. Eric Brown of the U.S. Food and Drug Administration and Dr. Arvind Bhagwat of the U.S. Department of Agriculture to find out how *S. Newport*, which has caused bouts of illness on the Eastern Shore of Maryland and Virginia, among other areas, contaminates tomatoes and how it so quickly develops antibody resistance. They also are trying, says Meng, “to identify a natural bacteria in tomato plants that can kill or inhibit growth of Newport. Or viruses that kill Newport could be sprayed on the plants.”

**A Long and Winding Road**

Although the acidic tomato might seem impervious to an agent of food poisoning like *Salmonella*, the
fruit is actually highly susceptible to contamination. The reason lies in the vulnerability of its growth and distribution environment. Unlike most fresh fruits and vegetables, tomatoes don’t follow one, single distribution or supply chain. And the journey tomatoes travel to reach restaurants or consumers’ kitchens is long and many faceted.

After irrigation, fertilization, and weed management, some commercially grown tomatoes take shortcuts, traveling from harvest to farmer’s market to your table. The bulk of fresh market tomatoes, however, follow an itinerary of numerous and sometimes replicate processes of washing, cooling, ripening, sorting, and packing before even reaching distribution by wholesalers, retailers, and food-service distributors.

According to the U.S. Centers for Disease Control and Prevention (CDC), all these processes or legs of the journey create opportunities for pathogenic contamination. Since 1990 the CDC has traced at least 12 outbreaks of salmonellosis—almost 2,000 culture-confirmed infections—to varieties of tomatoes. Which points to a lot of illness considering less than three percent of Salmonella infections are ever confirmed.

**The Cagey Pathogen**

Through environmental sampling on the Eastern Shore, Meng and Brown will try to determine the origin of S. Newport. Because outbreaks of salmonellosis caused by Newport have been so widely dispersed, researchers believe that contamination is occurring early in the distribution process, perhaps on the farm or at the packinghouse. Evidence suggests that possible sources are domestic or wild animal feces or habitats such as ponds and drainage ditches. The CDC sites dairy cattle as a major
reservoir for S. Newport. And researchers at the University of Wurzburg reported in September that S. Newport is spreading in U.S. dairy cattle in epidemic proportions, with infected cattle having the capacity to shed the bacteria in their manure for weeks, if not months.

Water that becomes contaminated and the soil, equipment, containers, and workers that in turn are contaminated by the water could come into contact with the tomato at many steps along its journey. Tomatoes can internalize a pathogen if immersed in water colder than the temperature of the fruit, if stems and flowers are contaminated, or once the fruit is cut.

Finding the origin of S. Newport will enable researchers to perform traceback investigations of infected tomatoes, which document every step of a tomato’s journey all the way back to where it was grown, including which individuals handled it during processing.

**DNA Finger Printing**

Meng is depending on bacterial DNA fingerprinting technology to distinguish between and compare strains of S. Newport. The Center for Food Safety and Applied Nutrition (CFSAN) describes the process this way:

*Bacterial DNA “fingerprints” are generated by pulse-field gel electrophoresis (PFGE). The DNA is first digested into pieces by reacting the isolated DNA with enzymes that are able to specifically break the DNA molecule into individual pieces. The digested DNA is placed at one end of the gel. A pulsing electric field applied across the gel drives the DNA pieces into the gel over a period of hours. The smallest pieces slip through the pores of the gel more quickly, so the pieces are separated as distinct bands in the gel, based on size. The resulting pattern of 30 to 50 bands, which resembles a bar code, is the fingerprint.*

In unlocking the mechanisms that enable a bacterium to develop antimicrobial resistance, Meng and Brown will study the bacterial cell membrane. “Membrane proteins,” Meng explains, “can serve as an efflux pump to remove antibodies from a cell.” Through genetic analysis using DNA microarray, in which DNA fragments are studied to see which genes are active and which are inactive, he hopes to determine which genes can start up or stop the pump.

Understanding the bacteria’s network of regulation should ultimately enable researchers to design new antibiotics. And that’s good news for all of us.
Youthful baby boomers coined the phrase, “Never trust anyone over 30.” Now, those same baby boomers are well past that landmark and, if they live in Maryland, have wisely put their trust in an organization that turns 30 this year. The Maryland Master Gardener Program was established in 1978 in Carroll County to educate state residents about safe, effective, and sustainable horticultural practices that build healthy gardens, landscapes, and communities.

“Even then, research was showing that run-off of pesticides and fertilizers from backyard lawns and gardens—as well as from farms—could have a significant impact on the health and water quality of the Chesapeake Bay and its tributaries,” says Jon Traunfeld, state master gardener coordinator with the University of Maryland Cooperative Extension. “The idea behind the Master Gardener Program was to reduce this negative impact by teaching people how to care for their home gardens and landscapes while reducing unnecessary pesticide use and pollution through integrated pest management (IPM).”

Training the Trainers

To accomplish this goal, the Master Gardener Program relies on a “train the trainer” approach, with faculty from the College of Agriculture and Natural Resources educating private citizens, who then share what they have learned with others. “To become an official Maryland master gardener,” Traunfeld says, “participants must complete 40 hours of classroom training plus volunteer policy training, pass an exam, and...
volunteer 40 hours of service in the first year. To maintain their certification after the first year, they take a minimum of 10 hours of continuing education and contribute at least 20 hours of service annually."

This service takes many forms. Among their many activities, master gardeners:

- Educate the public at information and demonstration booths at county fairs and other public events;
- Create and maintain demonstration gardens and composting sites for teaching low-impact, sustainable gardening practices;
- Provide technical assistance and designs for community garden and beautification projects;
- Design and create butterfly gardens on public school sites with teachers and students; and
- Conduct "Ask a Master Gardener" clinics at accessible public sites, such as libraries, farmers markets, and fairs to help residents solve pest, plant, and landscape problems.

Specially trained master gardeners also conduct special programs, like Bay-Wise Landscaping (see article in Fall/Winter 2007 issue of *Momentum*). And all have expanded their focus to meet changing societal and environmental needs. For example, they now work with clients on the identification and control of exotic, invasive species of plants and insects and teach residents how to slow run-off from their property with rain gardens. Most recently, such education has focused on the emerald ash borer. Prince George’s County master gardeners worked with Maryland Department of Agriculture staff to educate communities about this menace.

Continuing education is a key to the success of the Maryland Master Gardener Program. Certified master gardeners receive advanced training in organic vegetable gardening, plant identification, composting, weed identification, and plant diagnostics. Robin Hessey, the program’s advanced training coordinator, also organizes a much-loved advanced training day each May at the University of Maryland. More than 500 volunteers attended last year! Hessey also developed a 30-hour advanced training course on native plants with the support of a Chesapeake Bay Trust grant. After
taking the course, the 20 students developed a host of native plant education and demonstration projects in their home counties and Baltimore City.

Although accurate figures aren’t available, the impact master gardeners have had in Maryland over the past three decades cannot be overestimated. In 2006 (the most recent year for which complete statistics were available at printing) alone, they performed 63,569 hours of service...work that was valued at more than $1.2 million. They conducted 426 “Ask a Master Gardener” clinics at 51 sites, answering questions about plant and pest problems posed by more than 20,000 Maryland residents. They also helped certify 165 landscapes as “Bay-Wise”; taught 580 classes and workshops to more than 17,500 Maryland residents; established or continued more than 100 partnerships with schools, museums, hospitals, county agencies, and businesses; and much more.

**Touching Lives & Improving Communities**

And such work has more than a monetary value. It has led to more beautiful communities, increased production in neighborhood produce gardens, protection and enhancement of natural ecosystems, healthier soil, better quality water, a more educated citizenry, and decreased use of fertilizers, herbicides, and pesticides.

Take Rosemary Hills Primary School in Montgomery County, for example. When Eva Santorini, chair of the school’s landscaping committee, needed assistance, she turned to Maryland master gardeners. “One of the first projects I agreed to take on was the planting of several trees on the sports field,” Santorini recalls. “I also needed assistance in addressing the hodgepodge landscaping that had been performed at the school over the years.

“A master gardener helped us develop a plan of action and milestones. He also helped identify problem trees and weak landscape design elements and suggested which plants to remove, prune, or transplant. He was very sensitive to the fact that this was a primary school, and that safety and fun were unique concerns. I’m certain that without his selfless and generous assistance that the tree planting project might never have succeeded and would have been very difficult to maintain. It was a true pleasure to work with him!”

The program has even touched lives in some unlikely places. In 1996 the University of Maryland Cooperative Extension collaborated with Patuxent Institution, a maximum security prison in Jessup, to establish the Maryland Master Gardener Program as part of the prison’s Horticultural Therapy Program, a unique program with vocational and therapeutic components.
Master gardeners from the surrounding area conduct classes at the prison, creating a positive teaching environment where mutual respect and shared learning can flourish. And the gardens created by the inmates on site are all managed organically, which fits with the program’s therapeutic goal of encouraging a life free of chemical substances. To earn their Master Gardener certificate, trainees have raised saplings for the Maryland Department of Natural Resources, designed and grown plant material for community beautification projects in Baltimore, grown and donated vegetables to feeding programs, and maintained prison grounds and landscapes. Upon their release, several individuals obtained jobs in a horticultural field.

“The program has proven to be a benefit to participants,” says Dr. Randall S. Nero, director of Patuxent Institution. “Inmates have displayed increased self-esteem and reduced anti-social and belligerent behaviours, and some have become mentors to the new students. One recent graduate from the program said, ‘I not only have learned how to grow plant material organically, I have also learned a lot about myself as a person and what the drugs had done to my body.’”

And the scope and reach of the Maryland Master Gardener Program continues to grow. From a single program in one county in 1978, it now boasts 19 local programs in 16 counties, Baltimore City, and the two prisons. Two of these programs were added just last year.

So what about the future? What does Traunfeld predict for the Maryland Master Gardener Program’s next 30 years?

“I think that our most compelling challenge is to educate Marylanders to view their gardens and landscapes through an ecological lens,” he says. “Soil, water, plants, and animals are all connected and our gardening and pest management practices should build healthy soil, increase biodiversity, and improve water quality. Global warming and pollution concerns are making the public more receptive to these messages. In the coming years, we’ll be more active teaching ‘green’ gardening practices that use less fossil fuel and water and that strengthen ecosystems. And as the average age of master gardeners declines, we’ll probably see greater emphasis on environmental and gardening programs for youth.”

In the meantime, Traunfeld and all the state’s 1350 active master gardeners are celebrating a job well done. For more information on the Maryland Master Gardener program and updates on the 30th Anniversary, check out www.mastergardener.umd.edu.
Urban forestry has become a hot topic for urban planners and citizens alike. As suburban sprawl has expanded and metropolitan areas have increased, our countryside and forests have been disappearing at a rapid pace. Fortunately, town and city planners have begun to realize the importance of green spaces and are, more and more, recognizing the importance of trees within urban communities.

“In addition to aesthetics, the urban forest provides a filter for water and air quality, and its shade helps reduce the ‘urban heat island’ effect,” says Dr. Joe Sullivan, coordinator of the Urban Forestry Program in the Department of Plant Science and Landscape Architecture (PSLA). “The urban heat island is a condition found in urban areas. It’s caused by pavement and building structures and results in higher temperatures, higher pollution counts, and higher energy costs in the area. The urban forest reduces the need for air conditioning and air filtering mechanisms. Tangible economic benefits of urban forests have been documented through decreased energy costs, decreased carbon emissions, and decreased water pollution.”

The growing appreciation of trees by citizens, urban developers, and municipal governments has led to a corresponding growth in the field of urban forestry...defined by the National Urban and Community Forestry Advisory Council as “the art, science, and technology of managing trees, forests, and natural systems in and around cities, suburbs, and towns for the health and well-being of all people.” Tree inventories and urban forest assessments are now becoming an essential tool for providing information to city management and homeowners on the health and sustainability of their urban forests.
Last fall Dr. John Lea-Cox coordinated a pilot tree inventory for the City of College Park. A PSLA faculty member, Lea-Cox also serves as College Park’s volunteer city forester and chair of the city’s Tree and Landscape Board. “The College Park tree inventory builds on the efforts of my PSLA colleagues Drs. Joe Sullivan and Marla McIntosh and Mr. Jack Sullivan to implement and establish a campus-wide tree inventory in association with the University of Maryland’s sustainability initiative,” Lea-Cox explains. In August 2007, the university was among the top 15 colleges and universities nation-wide selected by Grist, an online environmental magazine based in Seattle, for efforts and support in creating and maintaining environmental stewardship and ecologically-minded campus sustainability.

The city tree inventory project, funded by two grants from the College Park City Council and the Committee for a Better Environment, spanned several weekends and involved eight teams, each assigned to a different area of the city. Teams were lead by PSLA graduate students and included volunteer city residents and undergraduate students majoring in a variety of fields. The goal: to assess and inventory between 75 and 100 public right-of-way (street-side) trees in each of the eight areas. The assessment included the location of each tree, its species, and a health/hazard rating. Participants also measured the diameter, height, and canopy width of each tree using laser rangefinders and a GIS database on a hand-held PDA, or tablet computer, to enter information directly into the GIS urban tree database. Taylor Keen of the University of Maryland’s Facilities Management Office, served as the project’s GIS expert and helped coordinate the resources and technical training in consultation with the city’s public works director and staff.

Lea-Cox and Taylor have compiled the data to provide an initial assessment of College Park’s urban forest for the city’s mayor and council. The public works department is already using and updating this database, so that the city can take a more strategic approach to tree maintenance and management from now on. “College Park has the designation of ‘Tree-City USA’ and has many citizens who are concerned about the declining tree canopy and tree health in the city,” says Lea-Cox. “The city also subcontracts with several tree management contractors for tree removal and replacement, so they would like to take a more proactive approach to managing and improving the status of the trees in the city...one that will ensure the health of our urban forest well into the future.”

Links for more information on:
University of Maryland Urban Forestry Program
http://www.psla.umd.edu/undergrad/NRSLMajor.cfm?ID=0107F
University of Maryland Sustainability Efforts
http://www.sustainability.umd.edu/index.php
Drought...the very word can strike fear in the hearts of farmers, homeowners, landscapers, and nursery owners. A severe drought just last year had aesthetic and economic impacts on Maryland and other eastern states.

It was just such a drought—some 17 years ago—that served as the impetus for Lambert Cissel Jr., an alumnus of the University of Maryland College of Agriculture and Natural Resources, to invent the Treegator, an ingenious device to water newly planted trees.

“I’ve been interested in developing and improving equipment all my life,” says Cissel, who graduated with a degree in agronomy in 1962. He founded Kimberthy Turf Farms—now run by his son Steve—in Woodbine, Maryland, 35 years ago, and later developed the slow-release watering bag for customers who were having trouble keeping their new trees alive.

“Newly planted trees need more frequent irrigation initially to become established,” the longtime Howard County resident explains. “Unlike older trees, their roots don’t reach down far enough into the soil to obtain water from deeper reservoirs.”

Working after his regular business hours, Cissel spent four years working on the Treegator design, which was patented in 1992. His biggest challenge: finding material that would heat seal and hold the pressure of the water. “I tested hundreds of different materials in my basement and finally found the one that worked,” he recalls. The final choice was a durable, UV-stabilized polyethylene that allows the bag to hold 25 to 50 gallons of water, which drips into the tree roots with little or no runoff or evaporation.

Cissel persuaded his younger son, Scott, a business graduate, to market the bag. The official name of Treegator evolved from “Tree Irrigator” to its current nickname—“Gator Bag.” The distinctive alligator leaning on a bagged tree logo was designed by a high school student, winner of a logo contest for high school-age students sponsored by the company.
Success came quickly after the 1996 Atlanta Olympics. Cissel explains: “Atlanta was in the middle of a drought during the Olympics and the Treegator really caught on. Thousands of trees in the city were bagged and it was covered by newspapers and TV.” Publicity led to interest in Maryland and other drought-plagued mid-Atlantic states. And it didn’t hurt that there was no real competition at the time, Cissel admits.

It took six people eight hours to make 12 of the original tree irrigator bags, according to Cissel. Today, three people working eight hours can make 950 bags, now manufactured by Scott Cissel in Raleigh, North Carolina. Employing 15 people, the company’s newest invention is the Treegator Junior Pro, a 15-gallon model that fits around low branch trees and bushes.

Cissel is justifiably proud of his invention. Since its introduction just over a decade ago, the Treegator has been used by highway departments, nurseries, landscapers, and municipalities around the United States, reducing tree transplant shock, frequency of watering, and costs associated with watering. “It would be fair to say,” notes Cissel, “that over the years the Treegator has saved millions of trees.”
Fall Flashbacks

From the dedication of the formal portrait of Sam Riggs at the Alumni Center to the cheer of fans in Byrd Stadium, AGNR alumni, students, and friends were out and about at a variety of events!

L to R: Rusty Yeiser (USNA ’74), Marian Fry ’72, Ed Fry ’69, and Gail Yeiser ’75 & ’82 pause for a moment in the Rotunda of the Samuel Riggs IV Alumni Center on the evening when the official portrait of “Mr. Sam” was presented. Sam’s nephew, Gordon Keys ’60, made personal reflective concluding remarks to an evening of celebration and recognition of the generosity of Mr. Riggs and others, particularly from the agricultural community, for making the dream of an alumni center a reality.

Green Building Fundraising in Full Swing

October became a blur of activities, starting off with the receipt of $250,000 from Howard County for the green building to be constructed at the Central Maryland Research and Education Center (CMREC) near Ellicott City. In the photo above, Howard County Councilman Greg Fox joins Dean Cheng-i Wei, County Executive Kenneth Ulman, and Delegate Gail Bates in accepting the check. Following the VIP breakfast, CMREC visitors were given a behind-the-scenes tour of CMREC before the public open house, which drew more than 2,000 members of the community.

Fundraising efforts for the Green Building continued at a Garden of Lights event at Brookside Gardens on December 11. Brookside Gardens donated all proceeds from the event to the Green Building fund.

Ria Malloy ’86 reports that the several hundred people in attendance “were delighted by the whimsical light displays.” Attendees, who gathered inside the conservatory for refreshments and entertainment learned, Malloy says, “about the green technology, sustainable agriculture and energy, and natural resource conservation features proposed for the Green Building.”

More about the Green Building is available at http://greenbuilding.umd.edu/

Homecoming Happenings

In addition to Amanda Brown ’03 playing her baritone and marching in the Alumni Band* at Homecoming, AGNR alums Eric Almquist ’96, Sarah Krizek ’06, and Sara Tangren ’00 in coordination with Kimberly Monahan ’96, coordinator, Student Services, Environmental Science and Technology, developed an attractive,
educational exhibit with “cool” AGNR- and backyard habitat-related giveaways for Terps of all ages. Their quiz and seed packets were a huge hit! Everyone won a prize and thanks to Chuck ’71 and Weida Stoecker ’71 everyone received an “AGNR Outstanding in His Field” sticker to wear into Byrd Stadium.

Eric Almquist is a project planner at Rummel, Klepper, and Kahl, LLC, Consulting Engineers in Baltimore, MD; Sarah Krizek is the children and family program assistant at the Audubon Naturalist Society; and Sara Tangren, who received her Ph.D. in 2000, is president of Chesapeake Natives Inc., a nonprofit organization located in Takoma Park, MD, dedicated to helping the public with their plant needs.

Thanks to all for making AGNR visible at the 2007 Homecoming Festival.

* Current AGNR students and AGNR club members in the marching band are Charlotte Sanford-Crane (Animal and Avian Sciences), Ben Brown (Landscape Management), Malora Cahall (Animal and Avian Sciences), Cindie Hengen (Animal and Avian Sciences), Dani Wysocki (Animal and Avian Sciences), Arin Elisabeth Blevins (Animal and Avian Sciences), Adam Cook (Animal and Avian Sciences), Catherine Gannon (Animal and Avian Sciences), Jennifer Hill (Animal Husbandry Club), Lauren Land (Environmental Science and Policy), Jonah Richmond (Environmental Science and Policy), Kimberly Schubert (Environmental Science and Policy), and Erin Shaw (Environmental Science and Policy).

Watch for announcements about the third annual AGNR Tailgate during the 2008 football season.

Celebrating the Semester’s End

Dean Cheng-i Wei took a break before the end of the fall semester to have lunch with AGNR Student Council members to thank them for their great work in the fall and to encourage them to make AG Day 2008 the best ever! Back row L to R are Charlotte Sanford-Crane, Ag Day coordinator; Dean Wei; Max Gordon, historian; Malora Cahall; and Amanda Heiman, treasurer; Lisa Richardson, president; and Sarah Meagher.
Scholarships: a Proud Tradition

Fifty years ago the Borden Award was presented to the deserving student on the left. Can you help us identify who this outstanding individual was? Joining in the presentation and congratulations are (from R to L): Dr. Paul Poffenberger, assistant dean for resident instruction; Dr. Wendell Arbuckle, dairy products professor; and Dr. Richard Davis, Dairy Science Department chair.

A College of Agriculture and Natural Resources sweatshirt is waiting for the first person to contact Gail Yeiser with the name of the recipient. Contact her at gyeiser@umd.edu or 301-405-2434.

For more information about how you can be a part of AGNR’s scholarship program, contact Brian Magness, director of development, at bmagness@umd.edu or 301-405-7733.

Sharing Our AGNR Terrapin Pride!

Robert L. Jones ’50 reports that a contractor has been named to move and rebuild the Marlin K. Hoff Memorial Log Barn at the Carroll County Farm Museum. The barn will be dismantled and reassembled log by log. The Maryland Agricultural Education Foundation, Inc., is working with the contractor in creating curriculum materials related to the history, math, and engineering of the barn, as well as the agricultural heritage of the barn and time that it was built. Hoff ’67 had always marveled at the hand-hewn log beams and V-notch corners, where the logs are joined without nails or other attachments of the barn that sat on his property in New Windsor. His dream of moving the barn for others to enjoy and learn from is becoming a reality through the energy and commitment of his family and friends following his death in 2004. The Hoff Barn Project is a 501(c)(3) corporation and contributions are tax deductible. The dedication of the reconstructed barn is scheduled for October 2008. For more information, or to become involved, contact Robert L. Jones at 410-848-7687.

Andrew T. “Ted” Ridgely ’60, pictured here with wife, Ruth ’56, at her fiftieth reunion homecoming, was inducted into the Maryland Dairy Shrine in February 2008. Ridgely was a long-time employee of Sire Power, now Select Sires, and instrumental in many progressive dairy cattle breeding improvements throughout his career. He and Ruth reside in New Windsor, MD, and are proud Terrapin parents of son Dean ’89 and grandparents of Keith Bennett, a student in AGNR’s Landscape Architecture program.

Kevin Stiles ’83, Animal Sciences, has been elected president-elect of the National Dairy Shrine. Stiles is vice president of marketing with Midwest Dairy Association and resides in Ankeny, Iowa, with his wife, Karen, and children, Logan and Garrett.

Jennifer Woodward-Greene ’94 is the director at the visitor’s center at the

continued on page 26
Looking Ahead

Mark your calendars and look for special invitations about the following College of Agriculture and Natural Resources events and activities; to register or for more information, contact Gail Yeiser, assistant to the dean for alumni and external relations, gyeiser@umd.edu or 301-405-2434.

March

17-21  UM Spring Break

29  Maryland Department of Agriculture Open House
    Annapolis, MD (AGNR exhibits in lower conference room)
    Open to the public

April

12  University of Maryland Alumni Association
    Awards Gala
    Samuel Riggs IV Alumni Center
    Bruce Berlage ’56 will be recognized as AGNR’s 2008 Outstanding Alumnus

15  AGNR Alumni Chapter Reunion and Awards Celebration
    Samuel Riggs IV Alumni Center
    5:30 p.m. Fellowship and silent auction
    7:00 p.m. Dinner served followed by student, alumni, and faculty recognition. Special guests: All graduating seniors (December 2007 and May 2008), former AGNR Student Council leadership, and AGNR Student Ambassadors. Reservations required

25  Celebration of Scholarships – campus luncheon
    Celebrating the generosity of donors and accomplishments of students.

26  AG DAY / Maryland Day
    AGNR Alumni Breakfast
    Special guests: AGNR alumni, scholarship donors and recipients, special VIP Ag Day partners, and past AGNR student leaders.
    Registration required

August 21- Sept. 1

Maryland State Fair, Timonium
AGNR exhibits in partnership with MDA in Farm and Garden Building; new for 2008: AGNR dairy cattle and educational exhibits from all departments and programs in the Cow Palace

TBA  Fall board meeting and AGNR Alumni Chapter annual meeting

October

4  AGNR Open House, Central Maryland Research and Education Center (CMREC) near Ellicott City

TBA  “AGtoberfest” and AGNR Alumni & Friends Tailgate, Campus Barn
Beltsville Agricultural Research Center at Beltsville (BARC). She is a 4-H volunteer with special interest in the dairy quiz bowl program. She and her husband, Stuart '81, reside in Woodbine, MD, with daughters, Amy and Amanda '08, an AGNR senior in the Nutrition and Food Science Department.

Cory Spies '03 has just assumed the position of farm manager at MD Sunrise, LLC, in Gambrills, MD (at the Naval Academy Farm). MD Sunrise, LLC, owned by Ed Fry '69, has entered into a long-term agreement with Anne Arundel County, which was awarded a long-term lease by the U.S. Navy to operate agricultural and educational endeavors on the 835-acre property near Ft. Meade.

Megan Baker '08 (an Agricultural and Resource Economics major) completed an internship with the Maryland Farm Bureau during the 2007 legislative session. During the session, she was in Annapolis two days a week, interacting with lobbyists, delegates, and senators on key issues. She is a member of Sigma Alpha, the professional/social sorority for agriculture; Collegiate 4-H; and the AGNR Student Council. She has an interest in international agriculture as well as cooperative extension, and perhaps agricultural legislative liaison work. Earning her MS degree is also an option following graduation in May.

Under the leadership of Dean Cheng-i Wei, the College of Agriculture and Natural Resources is moving forward in many areas. We are establishing an AGNR Alumni & Friends email List Serve to keep alumni and friends of AGNR up to date on college initiatives, activities, and accomplishments.

Please take this opportunity to update us with any new contact information, notes of your comings and goings, and highlights of your professional endeavors by completing and mailing back the form on the following page or by sending an email to gyeiser@umd.edu. Feel free to give me a call at 301-405-2434 as well to bring us up to date on your successes and activities. At the very least, share your email, so we can add you to the list serve.

I look forward to hearing from you and seeing you at campus and AGNR events as well as agriculture and natural resources events across the region. Go Terps!

Gail Poffenberger Yeiser
Assistant to the Dean for Alumni and External Relations
AGNR Alumni - Good to Hear from You!

Name: First______________________ Middle___________________ Last _______________________

Maiden or Name at time of Graduation: _____________________________________________________

Degree(s) and years of graduations and majors/specialities _____________________________________

Current professional specialty: ____________________________________________________________

Current Volunteer Roles__________________________________________________________________

Home Address: ________________________________________________________________________

City____________________________   State ________________________  zip____________________
(is this a new address within the past 6 months?)

Home Email: __________________________________________________________________________

Employer: ____________________________________________________________________________

Job Title______________________________________________________________________________

Business Address_______________________________________________________________________

City____________________________   State ________________________  zip____________________

Business Email: _______________________________________________________________________ (May we include this on the AGNR and Friends List Serve? ___yes  ___no)

Phones: ________________ home, ________________ business____________ mobile_______________

News or information that you would like to share with other alumni or Dean Wei:
_____________________________________________________________________________________
_____________________________________________________________________________________
_____________________________________________________________________________________

Please complete this page, detach and return to:

Gail P. Yeiser
College of Agriculture and Natural Resources
1208 Symons Hall
College Park, MD  20742
FAX: 301-314-9146   Email: gyeiser@umd.edu
**Friends Remembered…**

**Patrick Michael Lloyd ‘84** Institute of Applied Agriculture & ’88 BS AGNR lost a long battle with kidney disease on June 27, 2006. He was 41 and resided in St. Mary’s County.

Lloyd was interested in agriculture from his earliest childhood, working at Thompson’s Orchard in Great Mills, MD, and raising chickens and goats. A high school teacher encouraged him to attend college. He received a Senatorial scholarship from Senator Bernie Fowler in 1982 and graduated from the Institute of Applied Agriculture and then continued in the College of Agriculture.

While in college, Lloyd was a member of Alpha Gamma Rho Fraternity and held leadership positions in the Agriculture Student Council. Working two or three part-time jobs to cover college expenses, he assisted with fly research at the U.S. Department of Agriculture and helped with agricultural exhibits during the “Ag Week at the Mall” celebrations each spring. He remained on the alumni board of Alpha Gamma Rho Fraternity until 2000.

Following college, Lloyd operated his family’s farm in St. Mary’s County, raising hogs and vegetables, and specializing in market goats. He was one of the first to have Boer stock in the county, realizing their value to meat goat consumers. He was a nutrient management consultant for Maryland Cooperative Extension in Charles and Prince George’s counties and was on the leading edge of diversification of crops resulting from the tobacco buyout in Southern Maryland.

Lloyd was past president of the Young Farmers in St. Mary’s County and was active in the St. Mary’s Farm Bureau and Maryland Farm Bureau, Inc. He was the founding president of the Southern Maryland Market Goat Association and encouraged 4-H’ers to pursue goat projects.

Lloyd attended Mass at St. Nicholas Chapel at the Naval Air Station, Patuxent River, and taught Confirmation for 16 years, along with other Christian education classes. He also worked with the middle school youth, combining religious with agricultural education.

He is survived by his wife of 6 years, Marti Middleton Lloyd; his parents, Paul and Sherry Lloyd; maternal grandmother, Florence Gee; brother, Brian Lloyd; sister-in-law, Mary Beth; their children, Kacey, Hanna, Haley, and Cameron; sister, Cherri L. Williams; brother-in-law, Kevin; their children, Samuel and Nickolas; brothers Daniel and William Lloyd; and numerous cousins and close family friends.

**Reid is survived by her husband of nearly 70 years, two daughters, two grandchildren, a step-grandson, three great-grandchildren, two sisters, four nephews, and two nieces. Friends may send condolences to www.hillandwood.com**

**Flora Waldman Reid ’37**, wife of Robert T. Reid AGNR ’36, died June 6, 2007. She was born in Washington, DC, and while a student at the University of Maryland was active in the Student Government Association and YWCA. She was president of her sorority and captain of the women’s rifle team.

Reid and her husband moved to Orange County, VA, after WWII and bought a 400-acre farm. She taught at the Woodberry Forest School as head of the reading department. Reid was active in community affairs, including church and the Women’s Garden Club, and served as a member of the Orange County School Board for 13 years. She received the Byrd Citizenship Award from the University of Maryland.

**Charles George “Chuck” Stoecker ’71** died from injuries resulting from an automobile accident on November 16, 2007. Chuck grew up on a farm in Middle River and resided at their home farm in White Hall at the time of his death. He was 61 years old.

While a student at College Park, Stoecker was active in the College Republicans, serving as state chairman of the group, and on the Republican State Central Committee.

Following graduation in agricultural economics, he was an economist with the U.S. Department of Agriculture. In the 1970s he became a tax professional and was preparing to open a new office in Stewartstown, PA. He remained interested and involved with agriculture and politics throughout his USDA and tax careers. During the 1980s he became active on behalf of dairy farmers and how the farm bill affected Maryland dairymen.

Stoecker was a founding member of both the Waverly and downtown Baltimore Farmers’ Markets, where he was known for his collard greens, turnip greens, and kale. His family continues to be active in those markets.

Stoecker served as treasurer of the College of Agriculture and Natural Resources Alumni Chapter for 5 years. He was enthusiastically supportive of the silent auction held during the chapter’s spring
reunion and awards program. (Proceeds support AGNR student clubs and Stoecker enjoyed presenting checks to student leaders.)

Stoecker and his family were present at alumni chapter events held in coordination with Ag Day, Homecoming, tailgates, and AGNR open houses at the college’s research and education centers. Avid Terrapin fans, they frequently traveled with the teams to tournaments and bowl games.

Stoecker is survived by his wife, whom he had known since they met in college 40 years ago, Weida ’71, and their four children: Miranda ’03, animal sciences, of Towson; and Rebecca (Becky), Charles, and Thomas (Tommy), all of White Hall.

The Charles G. “Chuck” Stoecker Scholarship has been established in the College of Agriculture and Natural Resources. Memorial contributions may be made to the University of Maryland College Park Foundation c/o Brian Magness, director of development, AGNR, 1296 Symons Hall, College Park, MD 20742.

Verlin W. Smith ’43, a Northern Virginia Real Estate Developer who was involved with the transformation of Fairfax County from farmland to suburbia, died July 25, 2007, of lung cancer at his home in Oakton. He was 89.

Smith was the longtime owner of Farms and Acreage, Inc., in Oakton and helped assemble property for Tysons Corner, Fair Oaks Mall, Reston Hospital, and other large projects. He donated his business files to the Reynolds Center for Virginia Business History, a newly establish museum owned by the Virginia Historical Society in Richmond. His meticulous records represent a detailed historical record of post-World War II real estate development in Fairfax and other Northern Virginia counties.

A native of Hayesville, NC, Smith studied briefly at Berea College and enrolled at the University of Maryland, working his way through school as manager of the university’s dairy farm. He received his BS degree in agricultural sciences in 1943.

Smith served in the Marines and retired as a lieutenant colonel at the end of WWII. He and his wife moved onto the farm near Oakton and lived there with his son and daughter until his death.

Smith was a co-founder of the Fairfax County Chamber of Commerce and served one term on the Fairfax County Planning Commission. He helped develop vocational education programs and purchased land so that students could build a model house and then sell it to fund the next project. He worked to preserve the Vale School, a wooden building constructed in 1888, and helped establish the G. Richard Thompson Wildlife Management Area in Markham, where a trail was named in his honor.

Smith is survived by his wife of 63 years, Maryan Donn Smith; his daughter, Maryan Smith II of Oakton; sons Verlin W. Smith Jr. of Bristol, TN, and Donn Siler Smith of Orlene; Martha P. Klare of Cave Creek, AZ; five grandchildren; and one great-granddaughter.

Editor’s Note: It was learned at press time that Delbert Taylor Foster, longtime Montgomery County agricultural agent, died Jan. 31, 2008, at his home in Gaithersburg.

A native of Minneola, KS, Foster’s career in agricultural extension spanned 42 years with Iowa State and the University of Maryland. He and his family moved to Gaithersburg in December 1954 where he served as county extension director. During his tenure, he was the first director to integrate the Montgomery County Agricultural Extension Service and managed a staff of 42. In 1960, he was named president of the Maryland Extension Agents Association, becoming one of only two agents to have been president in two states. He retired as a full-time agent in 1980. He then spent the next 25 years with the Maryland Department of Agriculture as weed control coordinator in Montgomery County.

Foster was preceded in death by his parents; his wife, Bernice; his only child, Christina Louisa Edwards; and one brother, Hoyle Adair Foster. He is survived by his son-in-law, Richard C. Edwards; grandson, Richard Edwards and wife, Lynda; great-granddaughter, Kristina; and great grandson, Devin, all of New Jersey; as well as a brother, James Samuel Foster of Grand Island, NE.

A complete obituary citing the many accomplishments and recognitions bestowed on Delbert T. Foster will appear in the summer issue of Momentum.
Maryland Team Places Second in National 4-H Dairy Judging Contest

Maryland’s 4-H dairy judging team locked horns with more than 30 other teams from across the nation at the 86th National 4-H Dairy Cattle Judging Contest in October and came home with second-place honors in judging. As a result of their placement, team members Derek Lease (Carroll County), Laurel Moore (Queen Anne’s County), Hannah Smith (Washington County), and Amy Yeiser (Anne Arundel County) qualified to compete at the Royal Highland Show in Edinburgh, Scotland, in June. They were coached by Michael Allen ’84 of Glen-Toc-tin Farm and Kiera Finucane, coordinator of dairy and beef Extension activities at the College of Agriculture and Natural Resources.

Collegiate Soil Judging Team Takes Top Honors

Despite heavy rain at every practice and on both days of competition, the University of Maryland’s soil judging team took top honors at the Northeast Regional Soil Judging Contest, which was hosted by the university in October. Team members George Gaetz, Aisa Vinnikova, Clinton Gill, and Vera Jeffe did well individually and placed first in the group judging event. They are now preparing with their coach, Dr. Martin Rabenhorst ’75 & ’78, a professor in the Department of Environmental Science and Technology, for the 43rd National Soil Judging Contest at the University of Rhode Island in April.
Dear Scholarship Donor,

I find it rather difficult to explain in words my appreciation for your donation; however, I will do my best.

When I began applying to colleges as a senior in high school, cost and merit were the two predominant factors in deciding which college to choose. Ideally, I needed to find a school which would provide me with an exemplary education while simultaneously not burning holes in my pockets. Given my situation, I applied for various scholarships, namely the Meyerhoff Scholars Program at UMBC. Although I applied to UMCP, I was not selected for any university-sponsored scholarships.

Much to my happiness I was accepted into the Meyerhoff Scholars Program, thereby granting me a fully paid four-year escapade at UMBC. However, although I couldn’t have asked for better luck, I still really wanted to attend UMCP, but given the cost difference including the Meyerhoff scholarship, I was leaning towards UMBC as the optimal choice.

When I received a letter from the College of Agriculture and Natural Resources that I had been selected to receive the Land Grant Scholarship, I was more than thrilled. By donating this money, you have given me a chance at an exemplary education while simultaneously not burning holes in my pockets. You have cleared a boulder in my way; you have given me a new path in life.

All in all, this first semester was an exciting one. I am a nutritional science major, which fulfills the pre-medicine requirement. I plan on going into trauma surgery, as I feel it quenches both my thirst for intellectual gratification and adrenaline addiction. It is because of your donation all these things are possible, and I want you to know I am forever in your debt.

With utmost sincerity and appreciation,
Mehdi A. Naqvi
For more information on Academic Programs, contact:

Elizabeth Weiss  
Assistant to the Dean  
for Admissions and Recruitment  
0105 Symons Hall  
College Park, Maryland 20742  
301-314-7222  
eweiss@umd.edu

Visit Our Website  
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