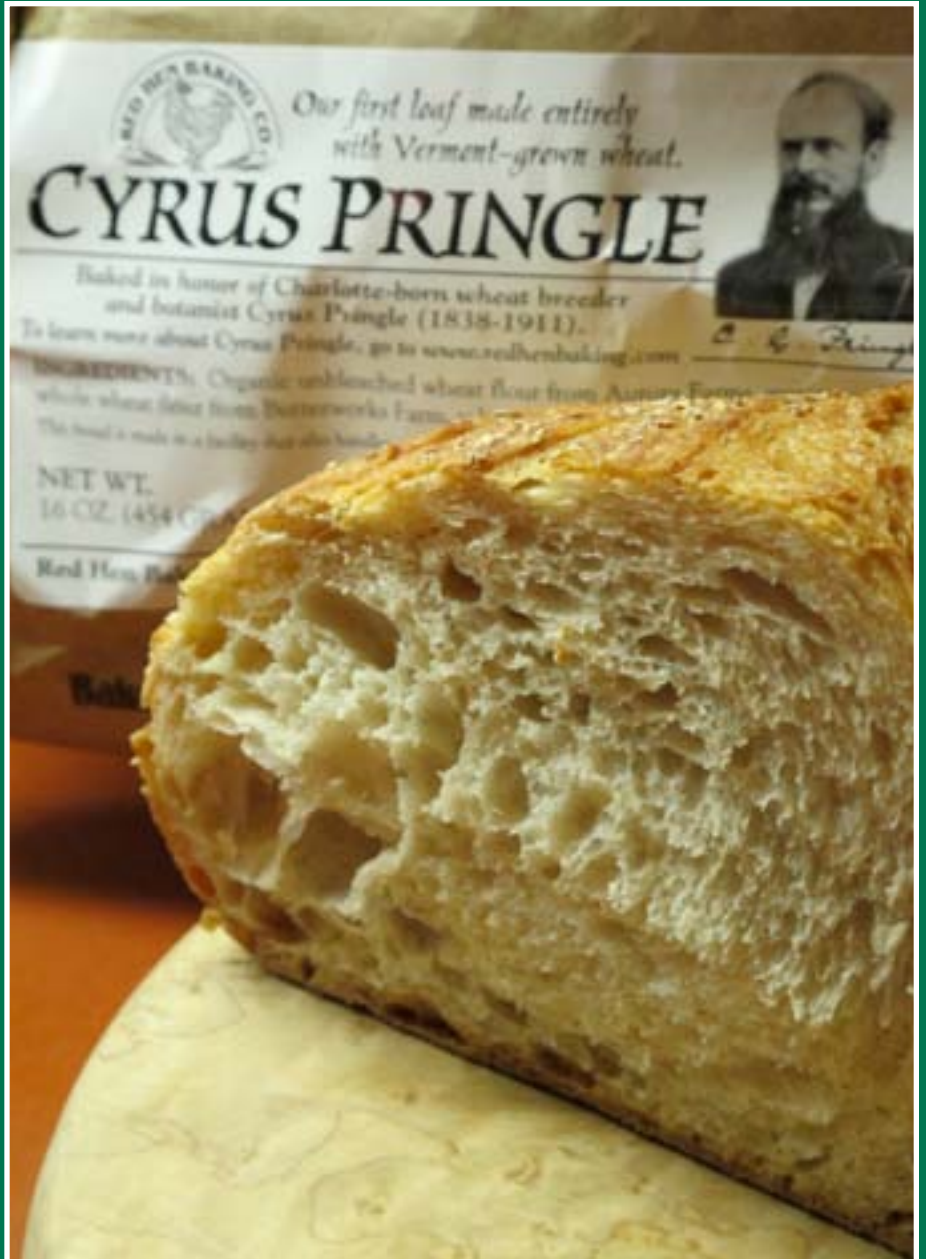


ANNUAL REPORT

for the Fiscal Year 2010



Working Together
For Common Goals



DEANS' MESSAGE

Finding Opportunities Amid Challenge and Change



Thomas Vogelmann, left, and Douglas Lantagne.

Every year just after Vermont Legislators convene for their new session, we host them at the State House to celebrate the partnership between state government and its land-grant institution, the University of Vermont, in our efforts to apply science-based research to help Vermonters. We introduce state leaders to some of our top researchers and outreach professionals in order to highlight Vermont Agricultural Experiment Station (VT-AES) and University of Vermont Extension projects in agriculture, environment, nutrition, food safety, health, community and economic development.

This annual report of VT-AES and UVM Extension is a primer of eight of this year's star project areas followed by a summary of how state and federal dollars and grants and contracts were put to work on these and hundreds of other projects. For a full reporting, visit the websites listed at the bottom of this page.

Among our many priority areas this year, we are especially proud to feature our multi-faceted work in the area of food systems. For example, in these pages we describe Diane Mincher and Dianne Lamb's program that helps people with diabetes dine healthfully and Rachel Johnson's national leadership and research showing that Americans' skyrocketing consumption of added sugars has led not only to diabetes, but also to obesity, heart disease, high cholesterol and high blood pressure. You'll learn how Jane Kolodinsky's food systems research grant goes directly to Vermont communities, while her Food System Research Collaborative links community organizations with UVM researchers. Kolodinsky is also newly named chair of an all-out, university-wide effort, dubbed the "UVM food systems spire of excellence," adding momentum to Vern Grubinger's initial efforts.

Whether we're tackling America's nutrition, food safety and health issues or the complexities of dairy farming, whether we're tracking and anticipating the extreme effects of global climate change or finding new ways to restore water quality, we look for opportunities in the midst of challenge and change. We look for ways that UVM Extension and the Vermont Agricultural Experiment Station are collaborating closely for the good of science and the benefit of Vermonters.

Thomas C. Vogelmann
Dean and Director
Vermont Agricultural
Experiment Station

Douglas O. Lantagne
Dean and Director
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CONTENTS

Preparing for Farm Disaster.....	1
Connecting New Farmers.....	2
Mapping Farm Assets.....	3
Eradicating Late Blight.....	4
Eating Less Sugar.....	5
Living Well With Diabetes.....	6
Leading Food Systems Change.....	7
Empowering VT Teens.....	8
Financial Report.....	9
Leadership Contacts.....	Back Cover

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FRONT COVER

Renowned botanist and Vermonter Cyrus Pringle (1838-1911) developed several wheat strains that, thanks to UVM research and on-farm trials, have been revived as a Vermont-grown crop and made into bread by Red Hen Baking Co.

BACK COVER

James M. Jeffords Hall, plant sciences laboratories, classrooms and offices for many Vermont Agricultural Experiment Station and UVM Extension faculty and staff was dedicated May 8 by Laura Jeffords, who spoke on her father's behalf.

For a full summary of this annual report visit



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AGRICULTURE

Expect the Best Prepare for the Worst

by Cheryl Dorschner

John Roberts is at a crossroad in more ways than one. His Butterwick Farm stands at the intersection of Cutting Hill, South Bingham and Barnes Roads in West Cornwall. Whether sipping tea from his front porch, strolling the stanchions that hold his 200 Brown Swiss cattle or meeting the bulk tank truck at the milk house door, he's rarely more than 25 feet from the middle of a road.

And while they are narrow dirt roads, low on traffic, experience tells him to be concerned. He wonders how he could quarantine his farm in the event of an agricultural emergency.

Growing up in England's Lake District, Roberts spent summers on another Butterwick Farm learning from David Bousfield, who became his mentor. He studied agriculture at the University of Newcastle-Upon-Tyne. That's why he well knows people who suffered the 2001 outbreak of foot and mouth disease, in which 2,000 cases resulted in more than 10 million animals being killed and untold economic, social and psychological losses.

"Many of my friends were affected. One committed suicide. I know how contagious and how devastating this disease can be," Roberts says.

That's one reason he agreed to be a test farm for Julie Smith's four-year research project to study the challenges of developing community-wide agricultural biosecurity plans in Vermont. Smith, a veterinarian and UVM Extension assistant professor, received a \$471,000 USDA Agriculture and Food Research Initiative Grant funded through the Vermont Agricultural Experiment Station.

Smith chose Butterwick Farm as one of four case-study farms where she and a team of researchers and outreach workers will give farmers, their goods and service providers and town leaders tools and strategies to create their own plans to handle widespread agricultural disease outbreaks. And in the long run, these formulas will be shared online as models for others.

Some aspects of this biosecurity research project that will evolve in the coming years are: workshops to develop on-farm plans, meetings among the diverse parties to clarify their roles, seminars that meld local plans with existing state plans and reveal gaps and drills, videos, websites and the like to educate the public.

Oil Rig Disaster Sets Example

Dealing with biosecurity issues such as these cannot be reactionary, stresses Smith. "It needs to be a proactive plan that doesn't just sit on the shelves or in the computer."

"The recent oil drilling rig disaster is a good illustration of



West Cornwall farmer John Roberts, right, talks with UVM's Julie Smith about the vulnerability of Vermont farms to disease outbreaks carried by outside vendors, fellow farmers and visitors while Middlebury milk man, James Turner, makes his daily stop.

Cheryl Dorschner

the concept of fantasy planning," Smith says. "While our government has plans, and the plans direct those within their jurisdiction, these plans do not control disasters, nor do they guarantee cooperation of individuals or businesses. The BP disaster should also lead us to recognize the danger of focusing on probabilities while ignoring possibilities. Vermonters are prepared for short-term disasters – the probable fire, ice storm, severe weather and flooding – but the less probable though possible disasters have more widespread impact over longer time and are much harder to handle."

And the plans are not just the bailiwick of farmers. "All people need to know about this, because, if it happens, it will affect everybody," says Smith. "An agricultural disease outbreak would take a huge amount of cooperation."

Smith believes that people in official roles – town leaders, emergency officials and those who do business on farms – must know how to play key roles in an agricultural emergency. And the public has a responsibility for individual preparedness and a right to know the scenarios.

At stake is health and safety, but also the food supply and rural economy.

Butterwick Farm, which Roberts owns and operates with his wife, Lisa Roberts, had a small dose of an outbreak in 2008 when mycoplasma bacteria struck. Experts are still not sure how it started. Mycoplasma is spread by animal-to-animal contact. Due to the disease's variety of symptoms, it took five weeks for a correct diagnosis and a full three months before the disease was eradicated. By then, "I lost 25 percent of my herd and about \$30,000, a month's income," reports Roberts.

This event, recollections of the foot-and-mouth-disease outbreak in the UK and the Roberts' diligence in running the best operation they can, combine well with Smith's expertise to create a nationwide model for best practices.

"My goal is this," says Roberts, "I want to raise awareness; I want to have a plan and I want to never have to use it."



AGRICULTURE

Connecting New Farmers to Relevant Resources

By Lisa Halvorsen

It all began with a cow. After a huge government beef recall, Lila Bennett, then a preschool teacher, grew concerned about the beef being served at local schools. So she offered to raise a cow for meat for her daughter's elementary school.

"When I began, I didn't realize how much I didn't know, but that desire to provide fresh, locally raised meat was the catalyst for us becoming fulltime farmers," says Bennett who, with her husband David Robb, started Tangletown Farm, a diversified, pasture-based livestock operation in Middlesex two years ago. Today the farm sells 100-percent free-range, pasture-fed and ethically raised meats, supplying meat and eggs to two elementary schools, as well as selling to consumers.

"We decided to do a meat CSA (Community Supported Agriculture) to help pay for the cow. At the same time we were trying to buy some land. We contacted the Women's Agricultural Network for help with finding grants."

Her connection with that UVM Extension program, one of several under the umbrella of the Center for Sustainable Agriculture's Vermont New Farmer Project, led to her enrollment in Growing Places, a course for individuals contemplating starting an ag-related business. Since then she's completed a nine-month whole farm planning class and recently was accepted into the Vermont Farm Viability Program, which she learned about through the New Farmer Project.

"We consolidated all UVM Extension is doing for and with new farmers under one portal," explains Mary Peabody, UVM Extension community development specialist, "organizing it around four key categories that new farmers need – capital and credit, land, markets and commercial production. Building skills in all of these content areas is critical for business success.

Customized Farm Planning

"People interested in farming have different needs as to what will work for them. We customize education to meet those needs, providing 24/7 access to education through our web site, classes and other resources." The web site provides farmers with a virtual tool shed – everything needed to create a personalized business development plan. It connects them with an array of online and on-the-ground resources, from factsheets and guidebooks to courses, workshops and webinars to assist in farm development.

Betsy Mattox, owner of Spring Chicken Farm in East Topsham, looked into the project's resources to learn more about the business end of farming.

"For two years I had a vegetable CSA. I'm transitioning the



Jessie Schmidt

Participants in a beginning farmers program facilitated by the UVM New Farmer Project learn about identifying forages and monitoring pasture land for increased productivity and biodiversity on Captain Munson Farm in Panton.

business more towards meat," she says, noting that next year she plans to ramp up her operation by adding pastured pork and beef. She's currently raising 550 organic broilers and 30 organic turkeys, all heritage breeds.

"I signed up for the Whole Farm Planning for Beginning Women Farmers course for financial planning," Mattox says, "but for me, the goal setting part was the strongest aspect. The class gave me the tools for stacking up business decisions against my goals."

The Orange County farmer adds, "I'm originally from Maine. I lost my farming community when I moved to Vermont three years ago. This was a great way for me to network with other new farmers."

Terry Marron graduated from Vermont Technical College in Randolph Center in the early 1980s with a dairy herd management degree but instead of farming, she went to work for the U.S. Postal Service. Two years ago, she took early retirement to start a business growing culinary herbs and cut flowers with her partner, Sally Fellows, on Windstone Farm in Williston.

"Growing Places asked the question, 'Are you cut out to run an agricultural business?'" she says. "The course gave me the confidence that yes, it's not out of my reach. I can make a living as a farmer.

"When I was accepted into the holistic farm management program, that sealed the deal. I got a mentor, Julie Rubaud of Red Wagon Plants in Hinesburg, who got me started off on the right foot by helping me develop a business and marketing plan."

"New farmers have a tremendous need for services, not just learning production skills, but also learning about networks they can tap into," Peabody points out. "The New Farmer Project is not a one-size-fits-all program. It doesn't matter where beginning farmers start, only that they have a customized plan that works for them."



ENVIRONMENT

Placing Value on VT Farms' Hidden Assets

by Cheryl Dorschner

“Vermont’s working landscape” – say that phrase to most people, and they’ll describe the patchwork of grazed, mowed, planted and built landscapes. What’s left over in their minds is the wild, natural forest. Oh sure, there’s a little woodland tended for sugarbush, woodlot or lumber, but, by and large (and in Vermont it’s very large – 70 percent of Vermont is forested) the forest is viewed as the untended and unused portion of what once was farmland.

That’s not how Ernesto Mendez sees it.

When he came to UVM in 2006, the agroecologist brought expertise in the science of growing a crop whose success depends on forested shade – coffee. And he brought an attitude that the forest’s ecological and cultural value to farmers can be described and maybe even quantified.

“I’m really interested in the conservation value of agriculture in a way that helps not harms farmers,” Mendez says. “Agriculture and conservation have been presented as at odds for a long time – as working the landscape for products versus preserving the landscape for conservation. Agriculture and conservation are not ‘either/or.’”

His research stresses conserving on-farm ecosystems and protecting the environment, while at the same time enhancing farms’ functions and the livelihoods of farmers.

In 2006, a \$10,000 USDA Hatch grant allowed Mendez to hatch his first research in Vermont. First he assessed the Vermont agricultural landscape through existing maps, then he worked with farmers to expand that information. Since then, Mendez convinced the USDA of the value and potential of this one-on-one work with Vermont farmers. Current grants through 2011 total \$110,000.

Farmland Has Unexpected Value

“I would say the core of this project is multifunction – the functions of a farm other than those that generate products – the ecological functions. These include plant diversity, water quality, wildlife and climate regulation – that last one is really important in Vermont,” he says.

Mendez, Sarah Lovell of the University of Illinois and colleagues found 30 willing participants among small and mid-sized Champlain Basin farmers – half vegetable growers and half dairy producers. Researchers rolled out detailed aerial photos and GIS maps onto participants’ kitchen tables and talked about every building, field and forest as they traced their fingers along hedgerows and fence lines.

“We asked, ‘what do you do in each of your parcels,’” he says. And with the answers, they penciled in hunting, snowmobiling and hiking trails, wild nut trees, places with family or historical



Cheryl Dorschner

Agroecology applies ecological principles to farm production, and that’s at the heart of the work of Ernesto Mendez with 30 Vermont farmers. His research helps farmers realize valuable land resources they may have overlooked.

value and the like. They walked the land, collected demographic information and interviewed farmers.

“We mapped the functions, got an idea of farmers’ attitudes and documented practices that may improve water quality, add to biodiversity and conserve tree species.”

Mendez and his team also asked farmers how they felt about conservation and what conservation programs they participate in. Initial results indicate that farmers don’t always know the programs they’ve signed on for. So next, researchers will review conservation programs available and assess how to improve them so they compensate or support farmers for the ecosystem services they provide. This could be useful to any farmers interested in conservation grants, tax-incentives and payments.

“We seek to identify key landscape features and habitats that serve multiple conservation functions, so that some day these functions might become policy priorities reflected in conservation programs that support or compensate farmers. We will also be able to explore opportunities to combine on-farm conservation with economic benefits or other incentives for farmers, including the emerging markets for ecosystem services,” his grant proposal states.

“At the world level, many people propose that governments should contribute money for climate mitigation. That’s not going to be easy or simple,” says Mendez, but even if that doesn’t come to pass, “we believe it is important to work with farmers that are interested in doing conservation on their farms and to start a dialogue with others who may not be so interested.”

“Through scientific understanding we can help procure sustainable food systems where people can make a meaningful living while conserving the environment,” one of Mendez’s project posters proposes.

Mendez recently submitted a proposal to UVM’s “food systems mini-grant” (see page 7) to, he says, “start taking what we found on the 30 Vermont farms and add other organizations that serve these farmers.”



ENVIRONMENT

Helping Vegetable Growers Fight Late Blight

By Lisa Halvorsen

Pete Johnson remembers the exact date that he first discovered late blight in his potato crop. Aug. 6, 2009.

The owner of Pete's Greens, a certified organic vegetable operation and year-round CSA (Community Supported Agriculture) in Craftsbury, knew exactly what he was facing thanks to timely updates throughout the growing season from Vern Grubinger, UVM Extension vegetable and berry specialist, who tracked the spread of this fungal disease of tomatoes and potatoes during its most serious outbreak in the Northeast in decades.

"I grow five acres of potatoes with a value of \$140,000," Johnson says. "If the plants die, it's no big deal. But if the infection goes into the tubers, then the potatoes rot in storage into a big gooey mess, and we lose the entire crop. When we got late blight, we were fully prepared, thanks to Extension, so my loss was minimal."

For Bob Pomykala, president of the Vermont Vegetable and Berry Growers Association and a commercial vegetable grower in Grand Isle, it was not potatoes, but his tomatoes, that got hit with the disease.

"The amount of information available to us was phenomenal," Pomykala says. "Vern updated information weekly, sometimes daily, so we knew what steps to take when it arrived and what to do with the crops afterwards. In the end, late blight was just a bump in the road for us."

According to the most recent USDA Census of Agriculture figures, 268 acres of potatoes, 91 acres of field tomatoes, and more than seven acres of greenhouse tomatoes are in commercial production in Vermont with a farm gate value of about \$8 million. "Late blight can take down a whole crop in a matter of days," Grubinger points out, "so potential losses would have been greater had Extension personnel not communicated across state lines to help the region's farmers keep track of the spread of the disease."

He adds that the exceptionally cool and rainy weather conditions in 2009 created the perfect storm for the disease to spread quickly from farm to farm. UVM Extension's ongoing attention to the situation helped growers minimize loss of yield and revenue with net savings statewide estimated to be several hundred thousand dollars.



Sarah Kingsley-Richards

Plant pathologist Ann Hazelrigg, at the UVM Plant Diagnostic Clinic, examines a diseased tomato leaf to determine if it has late blight or not. Early identification of the disease and education about its control helped commercial growers and home gardeners minimize loss from this devastating fungal pathogen of potatoes and tomatoes.

Multi-Faceted Approach Minimizes Crop Losses

Commercial growers were kept apprised of the progress of the disease and viable control options through electronic media, newsletters, meetings and on-site visits. The UVM Plant Diagnostic Clinic, under the direction of plant pathologist Ann Hazelrigg, assisted with identification of hundreds of samples and preparation of factsheets for growers, Master Gardeners and home gardeners.

"Extension Master Gardeners provided education and outreach for the gardening public," Nancy Hulett, Extension Master Gardener program coordinator says. "We weren't just reactive, but proactive. We answered questions through the Gardening Helpline and went to farmers' markets, county fairs and field days, fall plant sales – any kind of public event to get the information out there about how to identify this disease and what to do."

Judy Mirro, a Randolph Center gardener and certified Extension Master Gardener, helped disseminate information at the Randolph Farmers' Market this past year.

"Each week we featured a different theme at our table at the farmers' market," Mirro says. "The week we focused on late blight, we put an announcement in "The Herald of Randolph," the local paper. More than 35 people showed up with samples and questions.

"Late blight hit us hard in 2009," she continues, "so that heightened everyone's awareness in 2010."

"Along with everyone else, I waited with trepidation to see what would happen this past year," Pomykala says. "UVM Extension played a tremendous part in mitigating the harm. If people had not been urged to take proper steps to minimize overwintering of late blight after we were hit in 2009, losses in 2010 could have reached the same levels."



NUTRITION, HEALTH & FOOD SAFETY

No Sugar-Coating These Health Warnings

By Cheryl Dorschner

For most of civilized history, sweet treats were just that – treats. Hand made with care, delicious, decadent, exquisite, colorful, lavish confectionaries of all kinds were either rare or dear enough to be reserved only for special occasions.

Somehow, for many reasons related to the industrialization of food processing, today cheap sweets dominate the American diet, edging out the three square meals a day and ruining the health of young and old alike.

Soft drinks and other sugar-sweetened beverages, such as fruit drinks, energy and sport drinks, are the number one source of added sugars in the diet, followed by grain-based desserts, such as cakes, cookies and pies. In just the past 40 years, daily sugar consumption per person in the U.S. has risen more than 70 percent. Over the past 50 years, soft drink consumption has risen more than 50 percent, researchers say.

Americans are eating and drinking an average of 22.2 teaspoons of added sugars a day, or 355 calories, says Rachel Johnson, PhD, MPH, RD, a nutrition professor at the University of Vermont and lead author of a stricter scientific statement by the American Heart Association (AHA) released in August 2009 to the tune of 68 million media impressions. The AHA recommended that women limit added sugar intake to 6 teaspoons and men to 9 teaspoons per day. Sugar-sweetened beverages should not exceed 36 ounces per week.

Added sugars have no nutritional value other than providing calories. Research shows that high added sugars intake is inversely associated with reduced intake of several vitamins, minerals and fiber. In other words, people eat sugary foods and drinks instead of nutrition-dense foods. Other research shows that because calories in liquid form are less satiating than in solid food, they increase the total amount of calories people consume each day. But worse, consumption of added sugars is linked to weight gain, obesity, diabetes, heart disease, high cholesterol and high blood pressure, according to Johnson.

During her nearly 20 years at UVM, Johnson gained a reputation as among the first to quantify with research and spread the word on the proliferation and health consequences of added sugars in the American diet, particularly among children. She is among the most highly regarded and quoted experts on the subject. She has been interviewed internationally via the media throughout 2010, and last March she met with Michelle Obama, Bill Clinton and others as part of the First Lady's "Let's Move" campaign to end obesity. Johnson's work and the



Cheryl Dorschner

Confectionaries – once relegated to holidays, sweethearts and special occasions – now are a major source of obesity, diabetes, heart disease and cholesterol problems. Rachel Johnson's research helps policymakers deal with this problem that costs Vermont money, resources and its most valuable asset: its people.

publicity surrounding them helped sound the wake-up alarm for people to change their eating habits.

VT-AES, the National Dairy Council's Dairy Research Institute and the Vermont and New England Dairy Promotion Boards fund her research, among others.

Vermont Isn't Perfect

Vermont, often declared among the "healthiest states in the nation," is not immune to these issues, especially among lower income Vermonters. According to figures cited in the Vermont Attorney General's November report:

- Obesity-related expenses in Vermont are estimated at \$615 million a year.
- The average Vermont adult consumes 50 gallons of sugar-sweetened beverages annually.
- A one-cent-per-ounce excise tax on sugar-sweetened beverages in Vermont would generate approximately \$30 million per year and reduce consumption approximately 20 percent.

At a Dec. 3 press conference in Montpelier, Rachel Johnson was called upon to deliver sound scientific background and statistics to help inform policymakers about a controversial state proposal to levy a penny-an-ounce tax on sugary drinks.

Johnson expects the debate to continue among dietitians, nutrition scientists, policy makers, advocates and the food industry, however, as she writes in the September "Journal of the American Dietetic Association," "in the context of an American population that is predominantly overweight and obese and thus unhealthy, it is time for change."



NUTRITION, HEALTH & FOOD SAFETY

Dispelling Food Myths for People with Diabetes

By Lisa Halvorsen

Henrietta Richardson doesn't have diabetes, but someone dear to her, her 82-year-old mother, does, which is why she traveled from her home in Adams, Massachusetts, to the Vermont Interactive Television (VIT) site in Bennington to participate in the UVM Extension course, Living Well with Diabetes, in early 2010.

"I believe that the more you know, the better able you are to deal with diabetes," Richardson says. "My mom's the first in the family to have diabetes, but I'm a candidate. I'm a little overweight. The class taught me how to help her manage her diabetes and will help me prevent it."

UVM Extension food and nutrition specialists Diane Mincher and Dianne Lamb taught the four-session course in collaboration with Robin Edelman, Diabetes Program Administrator with the Vermont Department of Health, and Donna Hunt, a registered dietitian and certified diabetes educator with the Rutland Regional Diabetes Center. A total of 119 people participated in the course, which was offered at 14 VIT sites last January and early February, including 50 individuals with diabetes or pre-diabetes, 40 family caregivers and 29 home healthcare professionals.

VIT Course Provides Valuable Research-Based Information

"There is a great need for this program," Mincher explains. "When people are diagnosed with type 2 diabetes, they generally have one appointment with a registered dietician at the hospital or physician's office with a quick overview on how to manage food. The rest is about using the blood glucose meter, foot health and other health issues. We take it the next step, focusing on the food, including carbohydrate counting, menu planning and portion size. It's a research-based, hands-on approach to making nutritious meals at home to control glucose."

Mark Nash, a care coordinator for the Vermont Chronic Care Initiative in Morrisville, a Department of Vermont Health Access program that manages Vermont's publicly funded health insurance programs, agrees with Mincher about the value of this program.

"The term that best describes what I do is health coach," says Nash, who attended the Johnson State College VIT site. "I work with people with one or more of 11 chronic conditions, including diabetes. Insurance companies hire nutritionists and social workers to provide telephone support. We're feet on the ground."



Sally McCay

Students in the Living Well with Diabetes course learn to read Nutrition Facts food labels to determine number of carbohydrates per serving. The course is taught statewide using Vermont Interactive Television studios including this one in Williston.

"I visit folks every week, so I can reinforce information learned through courses like this. We go over it week after week until it becomes part of a person's life."

"The program gives people the confidence to make decisions about their food choices," Edelman says, noting that the statistics on diabetes are sobering.

In Vermont one in 15 people – that's 6.5 percent of the population – has been diagnosed with diabetes. While not as high as the national average of one in 10, if trends continue as they have, by 2050 the American Diabetes Association predicts that one in three people will have diabetes, the leading cause of blindness, kidney disease, heart attack and stroke.

"The population in Vermont is aging and younger people are becoming more sedentary, so there's an increased need to get the word out about self-management of eating habits for treatment and prevention of the condition," Edelman believes. "We are not prepared for a tsunami of kids with diabetes."

Living Well with Diabetes is funded by the Rural Health and Safety Education Competitive Program of the USDA National Institute of Food and Agriculture. It has been offered in Vermont for eight years, including the past two years through VIT. The program's success has fostered interest by Cooperative Extension Services in several states to develop similar diabetes education programs.

"We dispel the myths about what people living with diabetes can eat," Mincher says. "By showing them how to make healthier food choices, we help them take back control of their lives. That's the success of Living Well with Diabetes."



ECONOMIC DEVELOPMENT & QUALITY OF LIFE

UVM is the Hub of Food Systems Research

by Cheryl Dorschner

Jane Kolodinsky is helping to position the University of Vermont to be a food systems leader nationwide. And she's not the only one.

The phrase "food systems" is as prevalent in research circles nowadays as "ecological" and "sustainable" were before it. The USDA, NSF and other major research funders have targeted food systems in their requests for major proposals.

"UVM and Vermont are leaders in food systems right now, but the rest of the country is running fast to catch up," says Kolodinsky, who in 2010 was named chair of UVM's steering committee on interdisciplinary food systems research. "We need to stake our claim, we need to be the people that people want to talk to when they talk about food systems. We need to be first, we need to be bold and we need to be the best," she told a crowd at UVM's Food Systems Symposium in November.

Kolodinsky stressed that this is not just a UVM project, rather, "an effort of Vermont and for all of Vermont." Director of UVM's Center for Rural Studies' and its new Food System Research Collaborative, she worked with two other departments to create a food systems minor in 2010. Kolodinsky has her finger on the pulse of the food systems trend.

Everything from the medical health effects of airborne biodiesel particulates to ethics of eating fall under what UVM's calls its "food systems spire of excellence." In fact, more than 60 UVM researchers and 20 Vermont speakers convened at that Symposium to share ideas and raise issues and opportunities.

There's a palpable excitement, optimism and urgency around this "farm-to-fork" topic. And the conduit for much of that energy is Kolodinsky's 2009-2012 USDA Community Development Resources and Food System Research in Vermont grant secured with help from U.S. Sen. Patrick Leahy.

While the grant is broad and covers other aspects that benefit Vermonters, one of its goals is to increase communication, collaboration and research about food systems in Vermont, "much of the funding goes right to Vermont communities," says Kolodinsky, through programs such as VT FEED and Food Education Every Day.

In other projects such as the Food System Research Collaborative, "we are trying to increase collaborations that link UVM researchers with community organizations to further food systems research and enhance work on the ground in Vermont and beyond," she says. "This year we will fund three to four projects up to \$12,000 each for organizations partnering with UVM researchers to answer one of their food systems problems. Grant winners should be announced by the Legislative event at which this report is released."



Cheryl Dorschner

Jane Kolodinsky funnels her food systems research grant funding directly into Vermont communities through key food advocacy organizations. And she is leading UVM's steering committee to create new food systems research collaborations all across campus and with Vermonters.

Tangible results of prior partnerships were published in a new working paper series. One discussed whether Vermont's flourishing Farm-to-School programs will impact childhood obesity; another looked to France and Quebec for insights on how Vermont can develop place-based agricultural products; one considered possibilities in raw milk, organic and artisan products in light of milk prices; and another suggested that entrepreneurial Vermont businesswomen add Internet marketing.

How UVM Gained a Head Start

UVM is ahead of the food systems trend because it has long been positioned in this area and because, as one of the nation's small premier research universities, it is nimble enough to take advantage of this recent concentration of funding. "In 2006, we co-founded the Food Systems Leadership Institute with Ohio State University and North Carolina State University to develop institutional leadership for the 21st Century food system. Two years ago we created the Food Systems Collaborative between community organizations and UVM Researchers as a clearinghouse for of the food systems work being done in Vermont currently," says Kolodinsky.

"I think that food systems work is so urgent now because of a decline in our agricultural economy at the national level, growth in obesity related health problems, anticipation of climate change induced impacts on food production, increased awareness of food safety impacts and rising food prices in the midst of recession," Kolodinsky says. "They are all linked, and we need to understand the complexity on a more systematic basis. It is an exciting time to be doing food-systems work at the University of Vermont."

"With Vermont as our laboratory and in partnership with numerous organizations, UVM is positioned to be a national leader in food systems teaching, research and outreach. As we continue to move forward with this work, it is important to keep making connections and maintaining communication," writes research specialist Jessica Hyman on the food systems website <http://www.foodsystemresearch.net/>.



ECONOMIC DEVELOPMENT & QUALITY OF LIFE

Youth Ag Project Empowers VT Teens

by Lisa Halvorsen

The grass is still damp with dew as a group of sleepy teens gather on a cool summer morning to harvest zucchini, green beans and other ripe vegetables from a one-acre organic garden near the UVM Extension Office in Brattleboro. They jockey for position near the big sink in the shed to clean and pack the freshly picked produce that they will later sell at the local farmers' market.

As participants in the UVM Extension Youth Agriculture Project's Summer Work and Learn (SWL) program, these young people are learning about teamwork, communication, and leadership – all essential life-long job skills – through hands-on sustainable agriculture.

"These young adults work together to grow and market vegetables, visit local farms, mentor little kids visiting the garden site and learn about their food system," coordinator Liz Kenton explains. "It's a paid job, which provides underserved and at-risk kids with an opportunity for job training."

Katherine Derby of Dummerston, who participated for three summers, didn't know that she'd grow to love weeding or working with younger children. As mentors, the teens teach basic gardening skills to kids, help them harvest produce from the garden and prepare healthy snacks together.

Gaining Self-Confidence, Learning Life Skills

Derby's experience with the Youth Ag Project gave her the skills and confidence to land a job as coordinator of the Youth Serve Summer Employment Program in Bellows Falls this past summer. This program, like SWL, is funded in part by the U.S. Department of Labor and provides at-risk youth with experience in the workforce.

"Employers are often hesitant to hire youth because we lack experience in the workplace," the Hardwick College student says. "The Youth Ag Project gave me that experience, but more importantly, broadened my views of the world and helped shape who I am today."

Nessy Ariel Arbour wasn't sure what to expect when she applied to the program the summer after she graduated from Brattleboro Union High School. This was different from her previous entry-level jobs, she notes, "Because all the leaders worked hard to make everybody feel respected as a person and a worker. The program helped me develop a strong sense of self-esteem in the workplace and be able to better judge what workplaces will respect me as a person."



Gardening helps youth develop essential life skills and learn about food systems. Youth Agriculture Project participant Amie Schiller trellises a cherry tomato plant in the vegetable and herb garden designed and planted by the Girls Grow program in Brattleboro.

The UVM junior credits the program with giving her the confidence and job savvy to find employment when she graduates from college next year.

In addition to providing work experience, Kenton notes that another important aspect of the program is partnering with area agencies to give kids a greater connection to the community. In 2010, a strong relationship was established with the Vermont Foodbank.

"The first time we involved the Youth Agriculture Project, it was for help with a large corn harvest on an organic farm in Westminster," Theresa Snow, director of agricultural resources, says. By the end of the day, five youths and two adults collectively had worked 24 hours, harvesting 4,500 pounds of corn for the food bank to distribute throughout southern Vermont.

"It was hot, dusty, exhausting work, but the kids all left feeling satisfied," Snow says. "It got them thinking about agriculture in a different way. If we hadn't been there to glean, the food would not get to anyone's table."

Since the Youth Agriculture Project began in 2001, more than 700 youth have participated in SWL in Brattleboro, where the summer jobs program originated, and later in Bennington and Manchester. They have grown nearly 28,000 pounds of produce at the three sites – valued at roughly \$7,500 – 15,000 pounds of which was donated to hunger relief programs and schools.

"These teens not only grow healthy food and learn how to use it, they also gain valuable job skills and really give something back to their community," Kenton says. "That's empowering."

In addition to SWL, more than 4,000 Vermont youth have participated in in-school agricultural and life skills education programs. New programs in poultry entrepreneurship and youth tractor safety certification are being developed for 2011-2012.

Govt. Investment Helps Us Serve Vermonters

State and federal investments in UVM Extension and the Vermont Agricultural Experiment Station (VT-AES) are critically important to maintaining an infrastructure of people and facilities that serve the state every day. These investments provide a foundation upon which our faculty and staff can compete for other funds to extend and expand the work to meet the needs of more Vermonters.

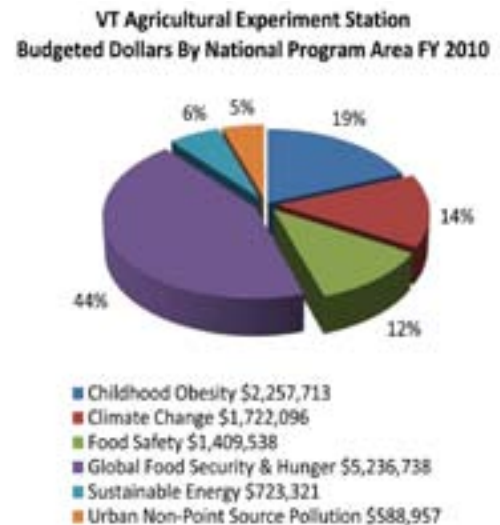
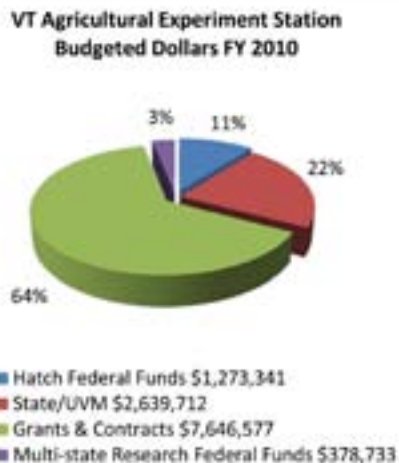
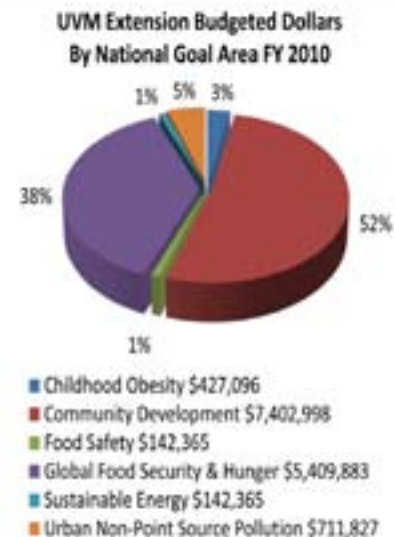
Leveraging federal and state funds through additional grants allowed UVM Extension to expand its work in food safety, farm business planning, local access to local food, farm safety and other areas.

Similar leveraging of VT-AES-funded research allowed more efforts in key areas such as childhood obesity, water pollution,

sustainable energy and the effects of climate change on our natural resources.

Our success in leveraging state and federal dollars is easily visualized in the VT-AES fiscal year 2010 budget, which totals nearly \$12 million and UVM Extension's \$14.2 million budget.

This solid performance means that both UVM Extension and the Agricultural Experiment Station are well positioned to deploy critically needed resources to expand efforts in supporting and growing the agricultural economy of the state, and create a brighter future for all Vermonters. Visit our websites for further details of our financial reporting for fiscal year 2010 which runs from Oct. 1, 2009 through Sept. 30, 2010.





James M. Jeffords Hall 2010



Contact us



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